Croonian Lectures
ON
SOME POINTS CONNECTED WITH THE ELIMINATION OF NITROGEN FROM THE HUMAN ODY.

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BY E. A. PARKES, M.D., F.R.S.,
PROFESSOR OF HYGIENE IN THE ARMY MEDICAL SCHOOL, NETLEY.

LECTURE I.

GENTLEMEN,—Few things are more surprising than the discovery that the varied phenomena of life have for their basis so few substances. The interplay of nitrogen, carbon, hydrogen, and oxygen, aided by some mineral combinations, suffices in some unknown way for the development or the manifestation of the wonderful vital acts. The agents are few and simple, but the results are numerous and complex. With scarcely more than half a dozen elements the Divine hand has shaped the interminable array of varied life, which stretches from the small point of unformed matter, organised, yet without organs, to the complicated structure of man, happy in being gifted with the mind which can recognise the wonder of his own being, and from the knowledge of himself can rise to a dim conception of the great Source of all things. Among this small group of elements, which make up the living body, and form the stage, so to speak, on which the wonderful play of life is acted, we must assign a leading place to nitrogen. Although forming nearly four-fifths of our atmosphere, it used to be regarded as a sort of negative body, as a mere diluent of oxygen, as something whose action in nature was unimportant. But such views are no longer received. From the atmosphere proceed the ammonia and other compounds of nitrogen which form the food of plants, and which, in fact, allow the possibility of vegetable, and indirectly of animal, life. The great circle of life commences in the atmosphere, and indeed ends there; for the atmosphere is, so to speak, the storehouse of the food of life, and, after its many wanderings, receives back again the nitrogen which had left it. The whole extent of the kingdom of life, the phenomena of growth, and the manifestations of the higher properties of living matter, are impossible without nitrogen. In some cases coverings or linings of living beings may be non-nitrogenous, but these are mere secretions or excretions with no independent growth. At every part where there is growth, contractility, sensation, thought, the organ contains nitrogen, and for the continued manifestation of those properties needs a constant supply.

Nitrogen is continually entering into every living body, and as continually leaving it. How does it enter it? How does it leave it? And between these two points of entrance and of exit, what are its combinations, what parts does it play, and into what structures does it enter? If we could reply fully to all these questions, which is at present impossible, we should have before us a view of the whole subject of nutrition. The object of these lectures is to discuss some parts of the answer which may be given.

How does the nitrogen used in nutrition enter the human body?

On this question there is little room for disagreement. For the purposes of nutrition of animal life the nitrogen enters solely with the food, and in the form of one of those substances of very similar constitution which have received the convenient name of albuminates. These albuminates, formed from simpler compounds by plants, are appropriated by the animal tissues of similar constitution, whose properties they assume, until, changing in physical characters by use, they become unfit for function, and are removed in order to be transformed into simpler compounds, and discharged.

Although we are continually inspiring nitrogen into the air-passages, only a small quantity passes into the blood, and does so simply from the effects of pressure, for under reverse conditions of pressure it is again eliminated. The experiments of Pettenkofer and Voit and Henneberg on men and cattle and pigeons show that Regnault and Reiset over-estimated even this small quantity of inspired nitrogen. Some nitrogen of the air entangled in the solid food and in the water we drink passes with the food into the blood from the stomach; and this is probably the source of the free nitrogen which exists in the urine, as well as part of that sometimes discharged from the lungs.

It has not yet been experimentally shown that in no species of animal is atmospheric nitrogen absorbed for nutritive purposes; but as, even in plants, it would seem that its combinations, and not the element itself, are used for growth, it seems highly improbable that any animal should have a power unpossessed by plants.

Again, in the higher animals at any rate, no evidence has yet been obtained that ammonia or its salts can supply nitrogen for nutrition. To find this power of application we must descend to the lowest orders of animals, probably even to plants.

How then does the nitrogen used in nutrition leave the human body?

On this point there has been far more doubt, though opinion is now tending strongly in one direction. With few exceptions, such as Bidder and Schmidt, the earlier experimenters both on the healthy human body and on dogs and cattle believed that, while the bulk of the entering nitrogen passed off by the kidneys and bowels, some considerable quantity, even sometimes one-third or one-half, emerged by the lungs and the skin. And the grounds of this belief were twofold. First: the then methods of examination seldom succeeded in proving in the urine and the fæces a quantity of nitrogen equal to that which entered in the food. Second: it was believed that compounds of nitrogen in considerable quantity had been actually found both in the breath (as ammonia) and in the sweat (as urea and ammoniacal substances).

The progress of inquiry has, I believe, invalidated both these statements. It has been shown, especially by the observations on dogs and men of Professor Karl Voit, of Munich—whose name will ever be associated with this part of physiology,—that all the nitrogen of the food can be recovered from the urine and fæces. Although still disputed by some physiologists, these observations have been confirmed by John Ranke, by careful observations on himself; by Lawes and Gilbert, and others in this country and abroad. So also Voit has shown, in his controversy with Seegen,* by a critical analysis of the earlier experiments, how the error in most cases arose; and has proved that the observations of Barral, Boussingault, Regnault and Reiset, and others, may be now considered obsolete. In like manner Meissner, again, has indicated the imperfections of the experiments of Sace on hens.† I can add a little evidence to that already published, as will be seen from the following table:—

Parellelism between the entrance and exit of nitrogen in healthy male adults.

No.	Age of subject.	No. of days experiment lasted.	Daily entrance of nitrogen in grains.	Daily exit of nitrogen in grains.		Total.
				By the urine.	By the bowels.	
1	23	3	195·24	183·‡	—	—
		5	215·6	204‡	—	—
		7	274·55	242·13‡	—	—
2	24	4	229·	222·‡	—	—
3	23	4	238·5	215·‡	—	—
		4	240·	212·5‡	—	—
4	28	26	270·	254·04§	27·74	281·78
		18	270·	254·22§	28·74	282·96
5	25‖	10	300·	306·§	27·5	333·5
		10	300·	305·§	27·6	332·6
		5	167·23	169·39	—	—
6	22½	16	302·6	292·7§	24·05	317·65
7	22	16	302·6	296·2§	16·6	312·8

* Zeitschrift für Biol., Band iv., p. 297.
† Henle's Zeitsch., Band 31, 1868, pp. 144 and 198.
‡ The nitrogen was calculated from the urea. § The nitrogen was determined by soda-lime. ‖ Lost weight during whole period.

On looking at this table it will be observed that there are thirteen cases, in seven young healthy men, in which the amounts of entering and outgoing nitrogen were determined during a sufficient number of days to enable the two quantities to be compared. In every case there is a close approximation in the amounts of entry and exit. In the first six instances the nitrogen of the urea only is stated; add to this the nitrogen in the urine belonging to substances not precipitated by the nitrate of mercury and the nitrogen in the fæces, and the amount entering will be quite covered. In the other cases where the total exit was determined the entrance is more than covered; in fact, there is generally a slight excess in exit, owing to the fact that in a regulated diet there is generally a tendency to lose weight. We cannot doubt, then, that an amount of nitrogen equivalent to that which enters in the food can be recovered from the urine and fæces of healthy men, and my experiments have been in every case confirmatory on this point of those of Voit and Ranke.

With regard to the second argument—viz., the direct evidence of cutaneous and pulmonary excretion of nitrogen, the analyses of the sweat of men by Favre, Picard, and Funke, seemed to give such positive evidence of the existence of urea in that fluid, that at one time no doubt seemed to exist. But the observations of John Ranke, Schöttin, and others have shaken confidence in those researches; and though the point may be considered as still uncertain, the weight of evidence is against the occurrence of urea. With respect to ammoniacal compounds, Edenheizen has lately again affirmed the excretion of ammonia from those portions of the skin of rabbits which during experiments were not covered with an impermeable layer; while Schenk* has shown there is no such excretion in healthy dogs. In men, though Leube found a decrease in the urinary nitrogen after sweating, and there was nitrogen in the sweat itself (which may have been from epithelium), Johannes Ranke could never either discover that any alteration was produced in the excretion of nitrogen by prolonged hot baths, which caused great sweating, or that any urea could be detected in the sweat. I have also kept men in the most violent exercise in hot weather, when it was proved by loss of weight that the cutaneous and pulmonary excretions were enormously increased, and never succeeded in lessening the passage of nitrogen by its ordinary channels of kidneys and bowels. On the whole, there appears to be little doubt that, apart from detached skin structures, the balance of evidence is against the passage of nitrogenous substances by the human skin. As regards the lungs, it is certain that much error has been committed by not taking into account the very easy formation of ammonia by animal and vegetable substances lying in the mouth, or gullet and œsophagus, and even in the stomach. Portions of food, detached particles of decaying epithelium, portions of dried secretion, &c., easily form ammonia under the influence of warmth, moisture, and air. These sources of error, and those arising from carious teeth, disease of the gums or air-passages, non-purification of the external air from ammonia, absorption of ammonia with food, and impurity of reagents (as pointed out by Thiry, and lately by Bachl†), account for many of these observations.

Summing up in a few words the evidence on the presumed pulmonary emission of ammonia, some excellent observers, such as Voit, Pettenkofer, and Bachl, have found no ammonia in the expired air of men and dogs. Others, as Thompson,‡ Reuling,§ Richardson,‖ Thiry,¶ Lossen,** Grouven,†† and Schenk,‡‡ have found ammonia in the expired air, but in very small quantities, and in some cases even the small amount was owing either to the outer air containing ammonia, as pointed out by Reuling,§§ or to certain sources of error not being eliminated. Others again, as Viale and Latini,‖‖ have found much larger amounts, but their experiments are incorrect, and indeed carry with them their own refutation.

Looking, then, to the fact that some of our best authorities can find no ammonia in the expired air, that when it has been found in properly conducted experiments its quantity has always been very small—viz., in men, in twenty-four hours, Reuling found only one-fourth of a grain (·237 gramme), Lossen one-sixth (·16 gramme), and Grouven, whose numbers are the highest, only ·6 of a grain—and this may be by both the skin and the lungs,—we may fairly conclude that in health the elimination of ammonia by the lungs is so slight that we may practically disregard it; and indeed it seems unlikely that it can represent any of the nitrogen arising directly in nutritive processes, but is most likely derived from decomposing animal matters (food, cast-off epithelium, &c.) in the bodily passages which escape detection.

The importance of being certain about these two points—viz., the mode of entry and the mode of exit of nitrogen—is at once apparent. All our observations must proceed on the understanding that we are dealing with constant conditions. If nitrogen can enter now in one way, now in another, and can pass off by four different channels, the complexity of the problem would be enormously increased. I think, however, that the evidence both of the entry and exit of nitrogen is sufficiently comprehensive to enable us to be sure that the nutritive nitrogen only enters with the food, and the only modes by which this nitrogen is eliminated in health are by the casting off of the nitrogenous coverings of the skin, and of the nose, mouth, pharynx, gullet and air-passages, and by the excretions of the intestinal and renal membranes. And, practically, we may look upon these last as the efficient channels of discharge.

If this be so, some questions arise of importance for physicians. Is it really the case that ammoniacal compounds, derived from the blood, are given off in the expired air in any cases of disease? I presume there is no doubt that in disease with accumulation of epithelium and exudation or fungoid growths on the tongue, gums, and pharynx, or in cases with long detention and fermentation of food in the stomach and passing of flatus into the mouth, ammonia will be detected, although the common experiment of holding a glass rod dipped in strong hydrochloric acid near the mouth can only prove its presence when the fumes are extremely great, since the attraction of the acid for the watery vapour of the breath causes a cloud. But in all these cases the ammonia is developed from decomposing substances which are virtually outside the body. Is there sufficient proof of ammonia being given off from the blood, and exhaled through the pulmonary mucous membrane in any disease? It may seem a bold thing to raise a doubt as to such an emission, considering the statements so confidently made on this point. Yet I think the doubt is justifiable. Few things are more remarkable than the way in which our opinions have changed with regard to the emission of ammonia in the breath of uræmic patients. The statement of Frerichs that the retained urea in uræmia was decomposed in the blood, and formed carbonate of ammonia, which was in part exhaled by the pulmonary mucous membrane, seemed so plausible, so accordant with the belief that urea would naturally decompose in a warm alkaline fluid like the blood, and so supported by the apparent proof of ammonia afforded by the glass rod dipped in hydrochloric acid held near the mouth, that no hesitation was felt in receiving it. But it is now acknowledged, I believe, by all that there may be the deepest uræmia (i.e., urea in the blood) without ammonia in the breath. In some cases certainly ammonia has been found in the breath of uræmia, and, it is asserted, also in the blood of some uræmic patients.

But the observations on the blood are still doubtful, and those on the breath are vitiated, as are all others, by the difficulty of ensuring that there is no local source of ammonia in the mouth, fauces, or larynx. Personally I have always doubted the occurrence of ammonia in uræmic breath, when the condition of the mouth and pharynx is normal, as in no single instance have I ever seen unequivocal evidence of it. In enteric fever, in by far the majority of cases, the expired air is free from ammonia, yet some few cases have been recorded in which ammonia was found; and in one instance, by means of his logwood test, Reuling found ammonia in the blood, which was not derived from urea. In exanthematic typhus, when ammonia is found, which is I believe seldom, it is derived from the tongue and fauces.

In 138 cases of different diseases (small-pox, measles, in-

* Zeitsch. für Ges. Phys., 1870, p. 470.
† Zeitsch. für Biologie, Band v., p. 61 (1869).
‡ Philosophical Magazine, vol. xxx., p. 124.
§ Ueber den Ammoniak-gehalt der Exspir. Luft. Giessen, 1854.
‖ On the Cause of the Coagulation of the Blood, 1858.
¶ Henle's Zeitschrift für Rat. Med., vol. xvii., p. 166.
** Zeitsch. für Biologie, vol. i., p. 207.
†† Futterungs-Versuche, 1864.
‡‡ Zeitsch. für Ges. Phys., vol. iii., p. 470.
§§ Reuling, op. cit., p. 48.
‖‖ L'Union Médicale, 1854, p. 98.

termittent fever, acute and chronic bronchitis, pneumonia, tuberculosis, dysentery, epilepsy, scurvy, jaundice, &c.), Reuling found no ammonia whatever. Looking to all these facts—to the small number of cases in which ammonia has been unequivocally detected in the breath; to the number of cases of the same disease in which it has not been found; to the numerous sources of fallacy which attend experiments of the kind,—I think I am justified in expressing grave doubts whether in any disease it has been sufficiently proved that ammonia is given off as an exhalation from the lungs, when it has neither been given as a medicine or taken with food.

Then as regards the skin, doubts equally exist. Many cases are recorded in which urine was supposed to pass off by various channels in consequence of some affection of the kidney. But the great majority, if not all, of these cases are recorded by old writers, who relied not on chemical evidence, but on the sense of smell; and no inconsiderable number were in hysterical girls, whose tendency to deceive is well known. The modern chemical evidence is less imperfect. When the sweat of some cases of cholera, of kidney disease, and of some forms of fever, has been collected and digested in alcohol, and subsequently treated by nitric and oxalic acids, crystals identical with nitrate and oxalate of urea have been found. The observations are not numerous, and we may well demand more precise evidence, but it seems to me impossible to reject it. At the same time, it may be fairly argued that the ease with which urea was formerly supposed to pass by the healthy skin disposed pathologists to accept with greater facility than would now be the case the evidence of the passage of urea in disease.

It has been asserted that leucin, tyrosin, and ammoniacal salts have also been detected in the sweat; but in this case it seems very probable that the source was decomposing epidermis. On the whole, the passage of urea or albuminoid substances by the skin in disease seems to me to require a careful reconsideration and more precise experiment.

The matter is one of immediate practical importance. It is a common belief that strong action on the skin by baths will not merely relieve the kidneys in respect of the passage of water and of acid (of which there is little doubt), but also of urea, or ammoniacal substances representing it. No doubt this practice has been based on *à priori* reasoning, and not on experimental proof;* and it is most desirable to know whether it is really efficacious.

Leaving, however, the question of the passage of nitrogen by the skin in disease as undecided, and returning to the healthy subject, let me ask—What, during health, are the proportions of nitrogen passing by the channels of the kidneys and bowels respectively? This question is not easy to answer, because the composition of the fæces is very much influenced by the food. On a purely meat diet the fæces approach closely the composition of meat; when starch and fat are added the composition alters, the fæces become more watery, and the percentage of nitrogen is lessened. In some cases even in health, and not uncommonly in disease, nitrogenous food passes undigested; in other cases it is retained for some time, so as to render comparison between two periods difficult.

Selecting only healthy men on a mixed diet of meat, bread, potatoes, &c., whose digestions were perfect, and whose fæces, when examined under the microscope, showed no portions of undigested food—except, perhaps, a few vegetable spiral vessels or cells,—I have found the amount of nitrogen as follows in five young men:—

Composition of intestinal excretion of healthy young soldiers on the same diet.

No.	Percentage of Nitrogen.	Nitrogen in 24 hours.	
		Grains.	Grammes.
1	·960	25·336	1·642
	·930	21·503	1·264
	1·234	18·922	1·227
	1·390	22·930	1·486
	1·489	32·990	2·138
	Mean...1·199	23·933	1·551
2	1·	30·551	1·98
	1·	10·955	·719
	Mean...1·	20·815	1·349
3	1·080	9·937	·644
	·768	16·834	1·091
	1·590	23·206	1·504
	Mean...1·146	16·631	1·079
4	1·038	25·289	1·639
	1·79	32·202	2·087
	1·296	45·132	2·925
	1·206	19·796	1·283
	Mean...1·332	30·597	1·983
5	1·166	35·164	2·279
	1·379	25·234	1·441
	Mean...1·272	28·699	1·860
	Mean of whole } 1·207	24·441	1·584

Although the amount in twenty-four hours thus varies, according to the size of the stool and the length of previous accumulation influencing the amount both of solids and of water, the percentage composition is tolerably constant—that is to say, the mean percentage determination in these five men only varies from 1 to 1·332; and the mean percentage of the whole sixteen analyses is 1·207.

If we take the mean of all the experiments, about 1·6 gramme, or nearly 25 grains, passed off daily by the bowels in healthy men eating about 12 oz. to 14 oz. of meat, 1 lb. of bread, 12 oz. to 14 oz. of potatoes, 3 oz. of sugar, 1 oz. of butter, and 6 oz. of milk daily, and receiving, therefore, about 18 to 20 grammes, or 270 to 302 grains of nitrogen daily.

The amount of nitrogen passing off from the bowels increases when nitrogenous food is increased, and lessens when nitrogenous food is lessened. When nitrogen is completely cut off, fatty and starchy food being supplied *ad libitum*, the stools become much more watery, and the nitrogen falls, even on the second day after cessation of nitrogen, to 6 and 7 grains in the twenty-four hours.

My numbers agree very closely with some experiments of J. Ranke on himself. On an average of seven days he found, with a mean entry of 17·91 grammes, or 276 grains of nitrogen, 1·7 gramme, or 26·23 grains, passed by the bowels, and 18·2 grammes, or 281 grains, by the kidneys. Some experiments by Sievert give a greater amount. With an entry of 19 grammes, he found 2·82 grammes, or 43·5 grains, in the daily fæces.

Is there any probability of there being a relation between the nitrogen of the urine and that of the stools sufficiently constant to render the observation of the ratio of importance in the treatment of disease? At first sight we should answer in the negative, since the presence of undigested food would render the analyses doubtful, and since, undoubtedly, the amount of the alvine excretion differs in different men, and is different in men and women. And yet the comparative constancy of my results leads me to believe that, when we have larger numbers, some definite ratio may be brought out; and that the examination of the nitrogen of the fæces may be really important to physicians. In four of my cases, the percentage of bowel-nitrogen to the total eliminated nitrogen was 11·45, 9·7, 8·67, and 8·1; the mean of the whole being 9·5 per cent. John Ranke's experiments give 8 per cent.

We know that there are diseases with structural alterations in the mucous membrane of the gastro-intestinal membrane, and in which, with a large supply of meat and other food, much passes undigested; the microscope then often

* Dr. Goolden informs me, however, that urea has certainly been detected in the sweat produced by the Turkish bath.

shows unchanged muscular fibre, and other portions of undigested food in the fæces. Here, doubtless, the ratio would be altered, and its determination would show how far the food was really used in nutrition. Again, in other cases, especially the diarrhœal affections, and perhaps in Bright's disease, albuminoid substances weep out from the intestinal membrane, and must disturb the ratio of discharge of nitrogen of the two channels of excretion; so that there seems a probability that the examination of the nitrogen of the stools, and its comparison with that of the urine, may be a matter of clinical importance.

Permit me to say a few words on the methods of determining the nitrogen in the urine and intestinal excreta.

It was not until Liebig devised his beautiful method of the volumetric determination of urea by the solution of nitrate of mercury that the elimination of nitrogen could be determined with sufficient ease and accuracy to lead to safe results. The method has been very largely used during the last sixteen years, and most of the statements of the amount of urinary nitrogen are based upon it. But it has imperfections. Long ago Kletzinsky showed that a nitrogenous colouring matter was thrown down with the urea by the nitrate, and this is known to be the case also with creatin. Dr. Thudichum finds also that the kryptophanic acid he has discovered in the urine is also thrown down. So that the mercuric-nitrate precipitate represents at least four things—viz., a nitrogenous colouring matter, creatin, kryptophanic acid, and urea. Then, as the percentage of nitrogen differs in these bodies—being, for example, 46·667 per cent. in urea, 37·17 per cent. in creatinin, about 9 per cent. in the colouring matter, and only a little more than 8 per cent. in kryptophanic acid,—this would make it impossible to calculate the nitrogen from the mercuric-nitrate precipitate, were it not that the amount of urea is so preponderating that the error of calculation is lessened. Still there is an error, and therefore the total nitrogenous excretion is better determined by another mode.

Liebig's method is also rather uncertain, as it is not always easy to judge of the shade of the colour which indicates the end of the reaction, as the chloride of sodium must be removed, and also as corrections have to be applied for dilution and concentration of urine. Now all corrections of this kind involve an assumption, and therefore some error. The general result is, that the amount of nitrogen is usually reckoned too high by Liebig's method.

Another mode of finding the total nitrogen of the urine is by burning it with soda-lime, as in common organic analysis, by leading the ammonia into standardised acid, and by determining it by platinum or by an alkaline solution. For a long time this method was little employed on account of some difficulties. Thus organic matters, before burning with soda-lime, should be dry. But it is impossible to evaporate urine, even with the lowest heat, without some decomposition of urea. It must, then, be evaporated *in vacuo*. But evaporation *in vacuo* is a long and troublesome plan, and even then some urea may be lost.

A plan proposed by Voit obviates these difficulties. A small quantity (5 cc.) of the urine is at once added to soda-lime in a glass retort; the water is driven over by a gentle heat into acid, and then by a stronger heat the nitrogenous bodies of the urine are decomposed. This plan determines the amount of all the nitrogen, including any free ammonia existing in the urine or derived from urea. There are some difficulties in detail, and the amount of urine is so small that, if an error is committed, it is multiplied into large proportions when a calculation is made for the urine of twenty-four hours. Still with care the plan seems very accurate.

I have slightly modified Voit's procedure with advantage. Instead of using glass vessels, which often get broken, a small platinum flask, shaped like an assay flask, with a long neck, is used; a glass tube runs into this neck, and is made air-tight by vulcanised india-rubber tubing which has been soaked in soda and boiled. The glass tube is bent, and the descending limb, which dips into the standard acid, is made so large that it will hold 50 cc. of the acid. The danger of the acid running back into the flask is thus avoided, and the operation becomes one of remarkable simplicity. The soda-lime being introduced, 5 or 10 cc. of urine are run in from a fine burette, and the glass tube is adjusted at once. The water is first driven off by gentle heat, and then the heat is urged to full redness, and kept so until the ammonia has been absorbed, and the acid has completely risen in the tube. As soon as it is cold enough, the tube is removed from the flask, air is blown through it, the tube is washed out with ammonia-free water, and the free acid is neutralised by standard soda solution, or the ammonia is determined by platinum. The first plan is the most rapid, and appears exact. With good turmeric and litmus paper, one-fortieth part of a cubic centimeter, or the third of a minim, will give an alkaline reaction to 100 cc. of water, so that the manipulative error of the method is very small. Estimated in this way the nitrogen of human urine is found usually to be a little more than the nitrogen calculated from the urea. In some men the two processes give almost equal results; more usually in my experiments the soda-lime process has given from ·3 to ·7 gramme, or from 5 to 12 grains, more in twenty-four hours. This excess probably corresponds to the uric and hippuric acids, and to some other ill-defined nitrogenous extractive matters. In slight fever, and even in health, the difference between the two methods may amount to as much as 2 grammes; and I think I have generally noticed that abundant urates and high-coloured urine accompanied and perhaps explained this excess.

This method can be advantageously controlled by Liebig's solution, so as to narrow the chances of manipulative error, since, if any great discrepancy is found, the analyses can be repeated.

The gross quantity of urinary nitrogen is thus rapidly and accurately determined. But the separation into the different nitrogenous substances is not so easy; for the exact quantity of urea cannot be properly calculated from Liebig's mercuric-nitrate precipitate, since other substances are in the precipitate. The creatin and creatinine require a rather long and tedious process; the extractives and Thudichum's kryptophanic acids also demand much care in estimation; and the exact quantities of uric and hippuric acids are determined with more difficulty than was supposed, so that it appears probable that the usual statements of the quantities of these acids are much under the proper amount. Still, all methods of estimation, direct and indirect, prove that in mammalia the urea forms the great channel of the excretion of nitrogen—perhaps as much as 90 per cent., or even higher; and that next in amount, though infinitely below it, come the uric acid, and creatin, creatinine, kryptophanic acid, and colouring matters. In birds the proportions are reversed; and, indeed, it was not until lately that the existence of a small quantity of urea in the kidney-excretion of birds was clearly proved. The contrast between the excretions of mammalia and birds is therefore not only curious, but opens a mode of experimenting on the antecedent conditions which may hereafter enable the mode of formation of one or the other substance to be determined.

The nitrogen in the fæces is estimated by drying a small quantity at a low heat, and by burning with soda-lime in a combustion-tube. Some oily matters usually come over, which render the process less neat, but which probably do not disturb the results. It is believed that this process is tolerably correct.

However interesting in a physiological point of view the determination of nitrogenous elimination may be, it would not force itself upon the attention of physicians engaged in treating disease unless it is likely to give information which might aid in diagnosis or in cure. But it is evident that the facts of the reception and discharge of nitrogen are cardinal points in our investigation of the phenomena of disease. For as the great manifestations of life are connected with it, the mutations of nitrogen must be at the bottom of every event which occurs in either the healthy or the diseased body. How far such mutations can be traced is doubtful, but it is certain that when they can be followed they must be of value.

I come now to the third question,—What are the combinations of nitrogen in the body; what parts does it play; and what are its successive transformations in the various organs?

This question, if treated in its entirety, would lead at once into the mysterious recesses of vital acts. A particle of an albuminate—a dead particle, as we term it—passes into the body, is attracted by a living structure, and then becomes gifted by the contact with the marvellous power of contractility or sensation. To attempt any explanation of this, to pretend that we have the slightest comprehension

of such a marvellous transformation, would be absurd. We cannot explain in the least degree alterations in bodies much less complicated. The simplest operations of chemistry are, in fact, equally beyond our power of explanation. Select some chemical substance, and make a trifling alteration in its composition: how wonderful may be the change in physical conditions. Although the elements composing it may be the same, and the only difference is a small increment of one constituent, its properties may be entirely changed. A gas may become a liquid; the specific gravity may alter; the boiling-point may be raised or lowered; colour may be transformed; odour may be developed; taste manifested; and, when introduced into the living body, different physiological effects may result. In a word, a molecular rearrangement has brought about a physical transformation.

The causes of such transformations are entirely beyond our reach; and the chemist does not attempt to account for the phenomena he evokes. His science is a mere record of the succession of events of which it does not attempt the explanation. He can predict events; he cannot interpret them.

If this is the case with the simpler chemical compounds, how much more so with those complex bodies which form the substrata of life? If we have no idea why an increment of carbon to a compound of carbon, hydrogen, and oxygen should give it a different consistence, weight, colour, and taste, or the power of crystallisation and accretion, how is it possible we can form any conception what arrangement of particles shall evolve contractility, sensation, and the power of assimilation and growth?

If, in the exercise of that imagination which is one of the instruments, though often an erring one, of human progress, we conclude that the heat, and light, and electrical phenomena which non-living substances can be made to evolve, must be manifested in the living body by processes of a like kind, we are still merely expressing what we suppose to be, and what probably really is, the sequence of phenomena; we are not explaining the sequence itself.

If, by the power of a still bolder flight, we dare to connect the vital manifestations of growth and reproduction, of voluntary movement and sensation, with similar phenomena of heat and light, the mind is overwhelmed by the darkness of the problem. We are still so remote from a sufficient knowledge even of the sequence of vital phenomena that we may indeed be reasonably permitted to doubt whether some greater mystery still is not behind the veil, and whether human knowledge will ever suffice to rend it. Certainly it seems at present a bold and hazardous leap to the conclusion which would rank the operations of the mind among chemical and physical phenomena, and trace back the power of knowing good and evil and the verdicts of conscience merely to a form of motion.

If it were posible to follow one of those few substances which form the abasis of living bodies, and to trace it in its course from the time when, as food for plants, it commences to lose what we call its mineral condition, and to enter into the charmed circle of life, which is eventually to lead it again into the inorganic world, we should have a series of transmigrations which would no doubt be characterised by the same simplicity and the same economy of force as were shown in the choice of the substances in the first instance. Nor is it impossible that we shall eventually thus succeed in following an atom of nitrogen or of carbon through all its varied combinations. What we cannot do, and what it seems to me we have no present hope of doing, is, to learn why, and in what manner, such combinations lead to changes in physical and vital properties.

The answer we must give to the question I have stated must be indeed a very humble and restricted one. We are only beginning to trace the succession of events, and it cannot be but that our first attempts will prove to be but rude and hazardous guesses. We may, however, plead, and fairly plead, the complexity of the subject, the difficulty of experimenting, and the numerous circumstances which may cause variations in the result, in extenuation of an ignorance which is not without parallel in every science. At any rate, I wish, in my own case, to ask your indulgence on these grounds when in the next lecture I attempt to penetrate a little, a very little, way into the hidden operations of the human frame, and endeavour to show in what part of the body a molecule of albumen passes into its corresponding particle of urea.

DANGEROUS AND FATAL RESULTS FROM THE USE OF HYDRATE OF CHLORAL.

BY H. W. FULLER, M.D., F.R.C.P.,
SENIOR PHYSICIAN TO ST. GEORGE'S HOSPITAL, ETC.

As the hydrate of chloral is being largely administered as a sedative and hypnotic, and is often recklessly employed in excessive doses, as if it possessed no noxious properties, it may be well to record a few cases in which moderate doses were productive of dangerous and even fatal results.

On Feb. 9th, 1870, J. S—— was admitted under my care into St. George's Hospital, suffering from slight anasarca and bronchitis connected with chronic Bright's disease. He was restless and nervous and unable to sleep, and therefore, after he had been some days in the hospital, and was exhausted for want of sleep, I ordered the chloral draught of the hospital (containing thirty grains of chloral) to be taken at bedtime. Soon after he had taken it he jumped up in bed, clutched at his heart, and complained that the medicine produced a sense of burning. In the course of a few minutes he became violently delirious, and though after a time the delirium subsided, so much depression ensued that Dr. Jones, our resident officer, had great difficulty in sustaining his heart's action. Gradually, however, the heart recovered itself, the pulse returned at the wrist, and in a few hours he was out of danger.

Having just read M. Liebreich's assertion that hydrate of chloral, when in contact with an alkali, is transformed into chloroform and formic acid, it occurred to me that the extraordinary results witnessed in my patient's case might be attributable to an alkaline condition of the stomach, whereby the chloral was at once converted into chloroform, and thus induced the symptoms which were observed. I therefore determined to try it once again, taking care on this occasion to guard against such an occurrence by administering the chloral in combination with a full dose of acid. The result, however, was precisely the same as on the first occasion. Again there was the same sense of burning and oppression at the chest, followed first by violent excitement and delirium, and subsequently by collapse with failure of the heart's action; and on this occasion, as on the last, Dr. Jones was long doubtful whether the man would recover. I need not add that I did not make trial of a third dose, even experimentally.

From that time until the first day of the present year I did not meet with any case which led me to question the harmlessness of chloral. I had given it to hundreds of patients in doses varying from ten grains up to forty-five grains, and had been called in consultation to two patients, one of whom had harmlessly taken two drachms and a half, and the other three drachms, in the night prior to my visit. In some instances it failed as a hypnotic; in some it produced headache; and in others it gave rise to more or less excitement; but in none was it followed by any symptom calculated to cause alarm. On the 1st of last January, however, I was called in consultation to see a case in which thirty grains of the hydrate of chloral proved fatal. The patient, a young lady aged twenty, who was previously in fair health, complained on Dec. 29th of constipation and other symptoms of stomach derangement, for which her medical attendant administered a pill at night followed by an aperient draught in the morning. On the 30th the bowels acted, and she was relieved; but she passed a restless night, and on the 31st complained of uneasiness in the lower part of the abdomen, which was attributed to the approaching menstrual issue. As she was very hysterical, a neighbouring practitioner was sent for early, and when he met the family medical attendant in the afternoon, they determined, as she was nervous and restless, and had obtained little or no sleep on the previous night, to give her thirty grains of chloral. She took the dose about 10 P.M. on the 31st, and almost immediately became much excited and complained of pain in the chest. In about an hour the excitement passed off, and she fell asleep and slept heavily all night. In the morning she was sleeping so heavily, and looked so pale, that the family became alarmed, and sent

for the gentleman who had seen her the previous day. When he arrived she was very pale and breathing heavily—a sort of deep sighing respiration; there was no pulse at the wrist, and her extremities were rather cold. It was impossible to rouse her in the slightest degree. He gave her stimulants and applied warmth to the extremities, and gradually the pulse returned at the wrist, though at the best it was only just perceptible. The family medical attendant subsequently met him in consultation, and together they did all that appeared to be expedient; but as everything failed to rouse her, or in any way to alter her condition, they asked me to meet them in consultation at 2 P.M.

When I saw the patient she was lying on her back, with her eyes closed, and breathing heavily, the respiration having a distinctly sighing character. She was very pale, and somewhat cold; the skin was dry; the pupils were large and dilated, but acted sluggishly under the influence of a strong light; the pulse was scarcely perceptible, but the heart was beating regularly, about 120 in a minute, and though its action was very feeble, its sounds were clear and its rhythm was normal. There was no distension of the abdomen—indeed, it was flat and soft; there was no contraction or rigidity or undue flaccidity of the limbs. It was impossible to rouse her in the slightest degree; but when fluid was put into her mouth she swallowed without much difficulty, so that she took a full-sized wineglassful of brandy-and-water in the course of ten minutes.

The indications for treatment being obviously to sustain the heart's action until the effect of the chloral had passed off, we determined to give her brandy and diffusible stimulants as far as possible by the mouth, and to supplement our efforts in that direction by repeated injections up the bowel of strong beef-tea and brandy. However, everything proved unavailing. She continued in much the same condition until about nine o'clock the following morning, when she sank, without having exhibited the slightest consciousness or moved a muscle from the time she fell asleep on the evening of Dec. 31st.

Judging from what I have learned from various members of our profession, I believe that although fatal consequences may rarely follow a dose of thirty grains of the chloral hydrate, yet that unpleasant, if not dangerous, symptoms are not unfrequently experienced. Dr. Tuke informs me that in a man whom he saw suffering from the effects of intemperance thirty grains very nearly proved fatal, the symptoms of depression and failure of the heart's action being most alarming; and Mr. Fred. Webb, of Maida-vale, has given me the particulars of another case in which an elderly man very nearly lost his life from the effects of thirty grains. The faintness, pallor, and depression of the heart's action were excessive, and for some time Mr. Webb was in doubt whether he would be able to sustain the pulsations of the heart until the effects of the chloral had passed.

Doubtless these cases are quite exceptional, and are met with only in about the same proportion as cases of death from the administration of chloroform. But the facts I have cited are sufficient to prove that such cases are more frequent than is commonly supposed. Further, they inculcate the necessity for caution in the administration of the drug; and they point to the conclusion that thirty grains form too large a dose for ordinary use, and especially for a patient in whom the effects of the chloral have not been previously tried. As a hypnotic in nervous restlessness, ten or fifteen grains ordinarily prove efficacious; and I have not seen or heard of any unpleasant symptoms following these doses. But the cases above recorded prove that larger doses, though usually harmless and often marvellously efficacious, are not unattended with risk; and now that the public are beginning to dose themselves with chloral, as they have done of late years with chlorodyne, this important fact cannot be too widely known.

Manchester-square, W., March 2nd, 1871.

SMALL-POX.—The Medical Department of the Privy Council has just issued a circular to all Boards of Guardians, calling attention to the prevalence of small-pox in London and Liverpool, and its probable extension to other towns unless the most stringent preventive measures are adopted. The Department advises the guardians to enforce strictly the provisions of the Vaccination Act, and provide facilities for the revaccination of persons over fifteen years of age.

CASES OF SUCCESSFUL VERSION, WITH LIVING CHILDREN, AFTER FAILURE OF THE FORCEPS.

BY J. J. PHILLIPS, M.D. LOND.,

ASSISTANT OBSTETRIC PHYSICIAN TO GUY'S HOSPITAL, ASSISTANT-PHYSICIAN TO THE CHILDREN'S HOSPITAL, AND PHYSICIAN TO THE ROYAL MATERNITY CHARITY.

THE following cases, which have occurred to me during the past year, are recorded as affording additional evidence of the superiority of version over the forceps in certain cases of coarctation of the pelvic brim.

CASE 1.—On April 25th, 1870, I saw, at Islington, a patient in labour with her seventh child. Her first pregnancy terminated prematurely at the seventh month, but the infant did not long survive its birth. This was the only child born alive. To this succeeded other premature deliveries; but it was believed that the fifth child and the sixth were born at term. In her last labour she was seen by a distinguished physician, who, failing to complete delivery by the forceps, performed version, and delivered her of a still-born male child.

The patient was short in stature, but there did not exist any apparent deformity of the spine or of the lower limbs. When I saw her, on the present occasion, she had been about fifteen hours in labour, and the os uteri had been fully dilated for some hours, but the child's head had not entered the pelvis. The pulse was of good power, and there were strong rhythmical uterine pains. The sacral promontory was easily reached by the finger. It was determined to administer chloroform. I then explored the pelvis, and found that the antero-posterior diameter at the brim, as accurately as I could measure it, was very little over three inches. I applied the long double-curved forceps, though I hardly expected to succeed with them; but no justifiable amount of traction produced any effect in bringing the head through the brim. I then seized a foot: the child rotated easily, and, as the soft parts were dilatable, the lower half of the body was soon born. The shoulders were hooked down by carrying the trunk first well forward and then backward. I anticipated considerable difficulty in extracting the head, but steady traction with one hand on the back of the neck and the other on the legs soon brought the head into the cavity with a slight jerk. The child—a good-sized female one—was born asphyxiated, but was resuscitated by artificial respiration, though it was about twenty minutes before she breathed vigorously. I heard subsequently that the mother and the child progressed favourably.

CASE 2.—On the evening of the 3rd of July I was called to a patient of the Royal Maternity Charity, aged forty-one, who was in labour with her sixteenth child. Of the fifteen children seven only had been born alive. She had been delivered of the last five "by instruments," and of these four were born dead. The patient had neglected repeated warnings to have premature labour induced. The midwife said that she had been delivered once by my predecessor in the Charity, Dr. Barnes, and that he advised labour to be brought on, in any subsequent pregnancy, about the seventh or eighth month. I found a fat woman, complaining loudly, and urgently requesting instrumental assistance. The liquor amnii had escaped eight hours previously, and since then there had been strong labour pains. The abdomen was very pendulous, the uterus lying forward, and the child's head had very slightly entered the brim. The pulse beat 130 per minute. I endeavoured to restore the uterus to its proper axis by means of a broad binder, and subsequently applied the long double-curved forceps, which locked easily. I felt confident at first that the forceps would succeed; but after using as much compressive power and firm traction for a considerable time as I deemed compatible with the life of the child, I desisted. Dr. Richards then kindly placed the patient under the influence of chloroform, and, introducing my hand, I carefully examined the brim of the pelvis. The conjugate diameter was estimated at about three inches and a half, but the fœtal head was very large and firm. I turned the child without difficulty. The head engaged in the pelvis in the left oblique diameter; its liberation was effected after meeting

with much resistance. The child, a large male, though at first apparently dead, soon recovered. The mother suffered from chronic bronchitis and emphysema, and her convalescence was rather slow, as indeed it had been after previous labours.

CASE 3.—Early in the morning of the 18th of February, I was summoned to a case of difficult labour, in which repeated attempts had been made to deliver by means of the long forceps. The history which I obtained was that the patient was the mother of three or four children; that each successive labour had been increasingly difficult; and that the last had terminated, with the aid of the forceps, in the birth of a dead child. The os uteri was dilated to the size of half-a-crown on the preceding morning; and at seven in the evening it was fully dilated, and the pains were frequent and very strong. Six hours later, as the fœtal head was pressed into the pelvic brim, but would not pass through it, the forceps were applied; but the attempts to bring the head into the cavity were unavailing. I turned the child slowly but easily, the patient being fully under the influence of chloroform. The head became again fixed at the brim for four or five minutes, but was then liberated by firm traction. Contrary to expectation, the child, after a little attention had been paid it, began to breathe, and subsequently to cry lustily. I have no note of the estimated dimensions of the pelvis in this case; but the obstruction was due to a jutting sacral promontory, which had produced a marked depression on the left parietal and frontal bones of the fœtal head.

Finsbury-square, February, 1871.

ON THE

METHODS TO BE ADOPTED IN THE CONSTRUCTION OF MENTAL SCIENCE;

TOGETHER WITH HINTS FOR THE LOCALISATION OF THE INTELLECTUAL FACULTIES, BUT MORE ESPECIALLY THE EMOTIONS.

BY W. G. DAVIES.

(*Concluded from page 376.*)

III. But how about the Anatomical method? That surely can cast its stone at the other two. How so, when it must be entirely dependent, either upon anthropology or psychology, for a knowledge of the mental operations which it seeks to locate? Without some guiding idea derived from one or both of these sources, its search would be blind and futile. But Anatomy, while she twines her arm round the waist of Anthropology, is too often cool and abusive to the elder sister, owing, no doubt, to that sister's pretensions, arising from having had too much of her own way while her younger sisters were yet children. Psychology, nevertheless, can alone put the material provided by Natural History into ultimate shape for the anatomist. Anthropology ranges the world for facts. Psychology is the chemist in his laboratory examining the composition of the specimens submitted for analysis; this laboratory being the investigator's own mind, in which alone he can have an immediate knowledge of the specimens sought to be analysed.

The recent speculations as to the seat of aphasia clearly indicate how much the anatomists stand in need of an exhaustive analysis of the mental and physical operations concerned in language. Before the anatomists can localise these operations, they must, in the first place, reduce them into their simple elements; because it seems too evident to admit of dispute that these latter alone need have a seat in the brain. A complex mental operation must be contributed to by several seats acting in concert. As long as the anatomists rest contented with some such crude notion of language as phrenology presents, they must not expect a final settlement of this problem.

Again, the anatomists cannot agree as to the signs afforded by the brain of its mode of action—namely, as to whether the whole of the cortical substance of the hemispheres is engaged in every mental operation, or whether certain portions of it have each their peculiar functions to perform. But what does this contrariety indicate? Not deficiency of anatomical research, but want of intimate acquaintance with the other two departments. Psychology seems to us plainly to demand the existence of a plurality of organs in the brain. That we may be simultaneously conscious, for example, of the tangible, the visible, and the audible, who will undertake to deny? If objects pertaining to the different senses are contemplated in relation to each other, this relation must form one whole; for no thought of a relative is possible without the coexisting thought of its correlative. The orator, when he addresses an audience, thinks, speaks, gesticulates, modulates his tones, and watches the countenance of his hearers all at once. He does not exert his will equally in each of these respects at the same time, much being due to automatic action. But that he is doing so more or less is quite evident. A vocalist sings a song as given in a printed copy of words and music. His visual centre must be engaged in scanning the words and the notes, his auditory centre, in realising the ideal sounds which are linked to the words and the notes, and then in sending the command to the motory centres. Of course there is here a chain of actions, one prior to the other. These actions are, nevertheless, of such a character that it is difficult to conceive how one centre could perform functions which are so distinct. For in that case, as soon as the notes, for example, were seen, the brain must change its mode of action in order to realise the harmony which the notes express, and then send on the command to the motory centres; and these changes would have to be repeated with intense rapidityeach time that fresh notes were brought within the axis of vision. We must say that we regard this kind of proceeding as most improbable, and especially so viewed in connexion with the facts which we shall now proceed to consider.

In reading a book aloud, a cerebral action connected with hearing must be excited by another connected with seeing, and consequently must be posterior to the other in time. But then it is quite manifest also to everyone's consciousness that in one sense the two kinds of mental activity are synchronous; that is, to use an illustration, while the water is filling the upper buckets of the mill-wheel, the wheel is also turning from the weight of the buckets already filled. If a consequent action is going on in the brain at the same moment as an antecedent action which is to be followed by another consequent action, it must be quite clear that the same cells cannot be concerned with both. Let a series of antecedent actions be *A B C*, and the series of following actions *a b c*; then we shall have them, if placed in parallel lines, as follows:

A B C
a b c

From this it is seen that *B a* and *C b* are in action at one and the same time; and the position which I maintain is that the same brain-cells cannot be engaged in both operations. Allowing, then, that thoughts succeed each other as wave impels wave, yet, since we can, by an effort of the will, command the continuance of the initial thought of a train for a considerable period, it must follow that several waves of thought coexist—as many, at least (for I am not treating of unconscious mental processes), as we can bring at one time within the axis, so to speak, of the eye of attention.

Again, when we contemplate the structure of the cerebrum, and consider that its grey surface is composed of a countless number of cells, and that nerve-fibres pass from one group of these to another (longitudinal fibres), and also from the sense-ganglia below to the cortical region above (ascending fibres), and that this superior region is divided into several convolutions, certain of which—the primary—are uniform in appearance in different brains, it is forcibly suggested that separate portions of the hemispheres have special functions to perform. Then it has now, we may say, been ascertained that the organs of sight, of hearing, and of smell are connected, by means of nerve-filaments, with certain clusters of cells at the base of the brain; and that these clusters also send off nerve-filaments to the cortical region, but surely not to every cell in that region, but perhaps to as many cells as there are fibres issuing from a sense-centre. What is the conclusion which naturally follows from these data? That the group of cells on the surface of

the hemispheres united by nerve-fibres to a sense-ganglion is the intellectual centre which relates to it. That perfect isolation of nerve-fibres which is discovered to exist would seem to answer no purpose, were there not a corresponding isolation among the cells to which the fibres are attached. In the sense of touch, for example, it must be by the outness of the sensitive minima (the cells, I presume, of the sense-centre), in relation to each other, that extension is cognised. The same must be true in the sense of sight. In the sense of hearing also, since sounds of different pitch can be distinguished as separate when occurring together, there must be certain nerve-fibres and cells adapted to each pitch. Now these facts indicate that the principle of discrimination, differentiation, or division of labour is largely involved in the brain's structure. But this principle is throughout nature accompanied with that of unity. What we expect to find therefore in the brain is a multiplicity of faculties, yet but one mind; and so perfect, indeed, is the unity in the variety, that some are disposed to deny the variety altogether. But, as regards the intellect and the senses, I have already argued out this question at considerable length, and only intend these remarks to lead the way towards the discussion of another point which I have more recently considered—namely, the localisation of the emotions.

IV. Is the whole brain engaged in every emotion, or only a portion of it? If a man feels a strong desire, like Balaam, to sell himself for a bribe, and yet is deterred by his conscience from doing so, it seems very unlikely that the whole brain is concerned with two kinds of feeling so opposite as these are; yea, if the two feelings are simultaneously experienced, as consciousness declares that they are, the same brain-cells cannot be the instruments, at one and the same moment, of conflicting emotions, for this would involve on their part opposite kinds of action at one time.

Again, if, as I have endeavoured to prove, there is an intellectual centre attached to each sense-centre, and if the intellectual centres so connected are all that is required for every kind of thinking, however abstruse, then, if there are no separate seats for the propensities and emotions, these centres occupy the whole of the cortical region of the cerebrum. But now the question occurs, When an emotion is felt, do all the perceptive centres feel it, or only one of them, and which? When complex emotions are experienced, is each perceptive centre engaged; or is one occupied with this emotion, and another with that? When conflicting feelings are felt, is the conflict between one centre and another, or between one portion of a centre and another?—and if the latter alternative be the more probable, are all the centres thus affected, or only one of them, and which is this? These are questions which, in a wide survey such as anthropology is forced to take, escape notice, but which are soon elicited by a minutely analysing and reasoning method like the psychological. The reply which I now feel constrained to yield to these inquiries, after for some time inclining to the contrary opinion, is, that the seats of the *special* emotions are separate from those of the perceptive faculties.

In the first place, we infer this from the law of evolution, according to which the progress is from the simple to the complex; the highest development is the most differentiated, the highest organisms are the most diversified in structure. The brain of a man, therefore, should show marks of higher differentiation than the brain of an animal lower in the scale of intelligence. And there is no doubt that it does, being both more varied in its structure, and, it would seem, of a larger relative size in consequence. The presumption derivable from this all-pervading law is, then, that the principle of the division of labour is more largely realised in man's brain than in that of any lower animal—that is, we are to expect more particularly to find in it a plurality of organs each having a specific function to perform. And what says Anatomy to this view of the matter?

There is an impression commonly prevailing that the intellect is located in the frontal lobes of the brain. But now, if the intellect is composed of a certain number of perceptive centres, the question naturally arises, Are there any indications within the frontal part of the brain that its primary convolutions correspond as to number with that of the perceptive centres? I am not prepared to state that this correspondence exists, but I venture to believe in the probability of this being the case. Among the perceptive centres we have, as the principal, touch, sight, hearing, and the perception of resistance, which might not inaptly be called the intellecto-motor centre, because it takes cognisance of motion and everything that implies motion, force, counter-force or resistance, and the absence of motion, rest. Answering to these faculties, we have in the frontal lobe of the brain the superior, middle, and inferior gyri, and, in proximity with these, the ascending frontal gyrus (Turner).* May not the orbital convolutions also be the centres of the less important perceptions? One fact which possibly may have something to do with this question is that stated by Professor Turner. Speaking of the fissure of Rolando, he declares, "In no case have I seen a connecting convolution bridge across this fissure in any part intermediate between its two extremities." May not this be taken to indicate that this fissure is the line which divides the intellectual from the emotional region? Of course, this is only conjecture, but it seems to me no matter of conjecture that the phrenologists, owing to the crude state of their psychology, have overstated the number of the simple sentiments and propensities. It is far more likely that these correspond in number with the primary convolutions of the parietal, the temporo-sphenoidal, and the occipital lobes, than with the so-called organs of the cranioscopists. Children and savages, though they may be reckoned to possess the germs of the higher emotions, yet in these, and the complementary germinal ideas of these, only potentially possess the higher emotions themselves. They must gradually acquire the notions which are allied to the sentiments of a higher sort; and this involves a very gradual building up of the organism both in the perceptive and the emotional centres—a building up which is as much dependent on the nutritive system as upon the systematic exercise of these centres.

The first ideas which become associated with emotion are, seemingly, personal or egoistic. Gradually ideas of a purely personal character expand so as to embrace the family, the tribe, the nation, till they finally become cosmopolitan. The emotions, however, must be much the same in all these stages. That which gives them their peculiar hue must be the idea which, by frequent association, has become organised in connexion with them. We cannot fail to perceive that emotions are far less changeable than ideas. The literature of the heart, to have recourse to common parlance, always retains its freshness, while that of the head has its day, and dies. Thus the immortal "Iliad" is an evergreen; but the speculative efforts of Thales and of Pythagoras, like many a crumbling monument of antiquity, now possess only a historical value. Let those whose moral sentiments are most fully displayed among us be supposed, while retaining those sentiments, to be reduced to the intellectual level of the dark ages, and they would do many things which they now think wrong; they would perform many actions which they would feel to be right according to their inferior knowledge, but which are now felt to be immoral according to our higher knowledge. This shows how large a share ideas occupy in our emotional life, and how emotions form rather the permanent, while ideas form the progressive, element in our mental existence. The phrenologists have overlooked this distinction; and instead of seeking only for organs, answering to the emotions as common severally to various grades of ideas, have searched also for organs answering to the very same emotions as twined about ideas of a high order. The consequence is that they have overstated the number of the sentiments and propensities as much as they have done that of the intellectual faculties.

The conclusion here arrived at is, that there are certain aptitudes in the brain for experiencing pleasure or pain of a *special* character in relation to certain ideas residing in the intellect; that each kind of idea possessed of such emotional affinity is, in the first instance, egoistical; that a certain number of these kinds of ideas expand gradually, so as to become altruistic. Here, we imagine, the change is not in the quality of the emotion, but in the idea. Thus, a craving for sympathy *from* others is self regarding, and is remarkably strong in childhood. The same feeling is probably the root of benevolence or sympathy *with* others.

* "It is not unfrequent to find it (the ascending frontal gyrus) cut across by secondary sulci into two or more stages, which are quite continuous with those gyri which run from behind forwards, and form the three stages of the frontal lobe."—The "Convolutions of the Human Cerebrum."

Given an aptitude for sympathy, with self for an object, we have that which in the lower animals is simply gregariousness; given the same aptitude, with all animate beings as an object, we have the highest form of benevolence. If this view of the matter be correct, it is not improbable that the primary convolutions situated behind the fissure of Rolando are sufficient in number to be the seats of the sentiments and propensities.

Adverse though these criticisms are to phrenology as a whole, yet they fully imply that Gall must have the credit of propagating ideas which form an epoch in mental science—namely, that the brain is the organ of thought, will, and emotion; and that it is this in accordance with the law of division of labour, multiplicity in unity.

Another point of importance demanding to be taken into account in ascertaining the seats of emotion is the very prominently objective character of the leading perceptive centres. The orange which we handle, the bow that we draw with so much effort, the picture which we gaze upon with such admiration, the song that we listen to so fondly, are all in a very marked manner felt as not only external to the mind but external to the organism. Now this strikingly objective character of the leading perceptive centres, this capacity for mentally projecting objects out of ourselves into surrounding space, seems to unfit them for being the seat of the special emotions. For the great peculiarity of the latter is their intense subjectivity. An emotion, a desire, is to all intents felt as *in* and *of* ourselves.

Taking these several facts into consideration, I now incline to the belief that the perceptive centres are not the seat of those special emotions which determine the character of human life—such, for instance, as the domestic and social affections, the aggressive and the defensive or self-preserving propensities, and the moral and religious sentiments; and consequently that the perceptive centres do not occupy the whole of the cortical region of the cerebrum.

An opinion contrary to this is maintained by able psychologists and anatomists. Among these Dr. Blandford and Dr. Maudsley take high rank; and in reference to their views of the subject I would state that I fully acknowledge the fact that the brain is subject to conditions which strongly influence the entire mood of the mind. Cheerfulness or gloominess, vigour or languor, mawkish sentimentality or the reverse, irritability or good temper, seem, I confess, to be general states of mind apparently very closely connected with the nutrition of the brain. The special emotions, however, may be contrasted with these general states in the same way as we contrast coloured objects with the light in which they are seen. A picture varies as it is seen by daylight or by candlelight, in a bright day or a dull. In like manner a special emotion will be greatly modified by the general tone of feeling which coexists with it. The man who performs an act of benevolence while in a melancholy mood is not likely to perform it with that exuberance of feeling which causes Scrooge to exclaim, "I am light as a feather; I am as happy as an angel; I am as merry as a schoolboy; I am as giddy as a drunken man. A merry Christmas to everybody! A happy new year to all the world!" On this case I would remark, that Scrooge's too liberal potations, in dreary solitude, the night before, would be very unlikely to contribute anything towards the intense cheerfulness which he feels; and that this must be accounted for by the weight of agony which is removed from his special emotions on finding that what he had been recently experiencing was a wonderful illusion, during a fit, as I understand, of incipient delirium tremens. The extent, therefore, to which the general tone of the mind is attributable either to special emotion or to the state of a person's health demands careful investigation.

Desire also we recognise as common to all the centres. When they are in a healthy condition and well-nourished, there must be a craving for action in them. The nature of this craving must be in accord with the special character of the centre in which it resides. Thus desire in a perceptive centre takes the form of pleasure in intellectual activity, and the absence of it renders intellectual effort tedious. Now, frequently the student, because desire in some emotional centre or centres is so exacting, has to work his intellect when jaded and craving for rest. What does this prove? That the emotional desire cannot be seated in the perceptive centres. Again, it is noteworthy that great thinkers, whose perceptive centres we should expect to find largely developed, are commonly observed to be an unimpassioned race of people, while poets and orators are carried away by the intense rush of their feelings. This peculiarity of great thinkers is just what we might expect from the fact already stated—namely, that the marked objective character of the leading perceptive centres incapacitates these for being the seat of the emotions.

County Asylum, Abergavenny, January, 1871.

Postscript.—Since writing the above I have had the pleasure of perusing Dr. Blandford's paper "On the Nature of Emotion" in the *Fortnightly Review*. But as yet I have met with nothing to shake the conclusions here advanced. In answer to Dr. Blandford's objection that from the days of Gall, Spurzheim, and Combe, to those of Schroeder van der Kolk, every attempt to locate emotions has signally failed, I beg to reply that this is just the sort of argument which has again and again been urged in support of many an exploded hypothesis. But observe that an opinion resting solely on the ill-success of inquiries to establish the contrary alternative has only *negative* evidence in its favour. As to the fact that we see considerable emotional feeling manifested by such creatures as the ant and the bee which possess no cerebral hemispheres, I conclude that, at first, the nervous system is a medley containing potentially within itself all that is found in its most developed form; and that parts (for example, either the spinal cord or the sensory ganglia,) which seem to be seats of intelligence and emotion in certain kinds of animals, cease to be such when these mental functions, as in the superior animals, have had to emigrate to a higher seat.*

A Mirror
OF THE PRACTICE OF
MEDICINE AND SURGERY
IN THE
HOSPITALS OF LONDON.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

KING'S COLLEGE HOSPITAL.
LIGATURE OF THE SUBCLAVIAN ARTERY.
(By Sir WM. FERGUSSON.)

THE patient was a healthy-looking man of middle age, and was the subject of an aneurismal tumour in the right axilla, which, by pressure on the brachial plexus of nerves, had caused wrist-drop and paralysis of the arm.

An incision was carried three inches outwards from the margin of the sterno-mastoid, half an inch above and parallel to the clavicle. The platysma myoides and cervical fascia were divided to the same extent, the posterior belly of the omo-hyoid being set free and held upwards out of the way. Owing to the raised position of the patient's shoulders, this incision was found to be insufficiently large, and it had to be converted, by slight incisions above and below, into a crucial opening. The exact position of the subclavian artery having been ascertained, the scalenus anticus was exposed by division of some of the clavicular fibres of the sterno-mastoid, and, by careful incision of the deep fascia, the vessel was finally brought into view. The needle was passed beneath it from before backwards, and the vessel was securely tied after Sir William Fergusson had ascertained that the pulsation of the tumour ceased entirely while it was compressed.

Sir W. Fergusson said that, in the course of a practice extending over forty years, in which he had enjoyed exceptional opportunities for seeing cases of aneurism, he had only met with one other aneurism of the axillary artery for which he could recommend an operation. The present case had not been unattended with difficulty, as the patient, a man of very

* See this more fully stated in the forthcoming number of the *Journal of Mental Science*.

muscular build, and with an unusually curved clavicle, had long contracted the habit of carrying his shoulders in a very raised position. The platysma was so well developed that it threw the skin into vertical folds, and made it impossible before the operation to discover the position of the omo-hyoid muscle; also the divided veins, though small, had bled with such freedom as to fill up the wound very rapidly.

The progress of this patient was satisfactory until the eleventh day, when he showed symptoms of pyæmia, of which he died on the eighteenth day.

LIGATURE OF THE EXTERNAL ILIAC.

(By Mr. HENRY SMITH.)

The patient was only thirty-two years old, and had a large aneurism, which involved the right common femoral artery and extended above Poupart's ligament. It was intended to perform the operation on Feb. 11th, but a day or two prior to that date the woman suddenly disappeared, and did not return until after another week. During that short interval the aneurism had increased very much, and had come to extend nearly two inches above Poupart's ligament. The patient complained of intense pain in the tumour and the upper part of the thigh.

Mr. Smith made a very free incision above, and internal to, Poupart's ligament, carrying it high up so as to permit the ligature of the upper part of the artery. The tendon of the oblique and the subjacent muscular tissues were freely incised, and, the handle of the knife being lightly applied, the peritoneum was exposed, and with the forefinger of the left hand was gently turned upwards and inwards towards the median line, so as to bring the artery into full view. Its sheath was opened, and the needle was passed around it well above the aneurism. No director was employed, and no vessel of any importance was wounded; in fact, the operation was of the simplest character.

In alluding to this case, Mr. Henry Smith said that, whereas the operation which Sir William Fergusson had just performed was one of rare occurrence and of a very formidable character, his own case was an example of aneurism which was not infrequent, and required an operation which, though of great magnitude, was not usually of a formidable description. In illustration, he pointed out that, in his own comparatively limited experience, he had tied the external iliac artery on six different occasions, whereas Sir W. Fergusson had performed ligature of the subclavian twice only. After minutely describing the operation, Mr. Henry Smith took occasion to warn the pupils against imagining that the operation was always as easily performed as in the present instance. It might be attended with considerable difficulty, in consequence of the presence of a large quantity of fat or of enlarged glands. He had witnessed two instances in which the difficulties were of a formidable character, and it was impossible always to predict what they might be. Great stress had been laid by some authorities upon the necessity of dividing the transversalis fascia freely upon a director, but his experience of this operation had not led him to acknowledge the importance of this precaution. He would, however, caution them to handle the peritoneum very gently while turning it on one side; for if hasty or rough manipulation were employed in that important part of the operation, the artery would be pushed up along with the membrane, and the surgeon, although seeking it in the right place, would actually not be able to find it. This accident had occurred to him whilst operating on the dead body, and once in the theatre of King's College Hospital whilst seeking for the vessel in the living subject.

We are glad to report that this patient has progressed most satisfactorily; the ligature came away on the thirteenth day, and the wound is rapidly closing.

WEST LONDON HOSPITAL.

CASES UNDER THE CARE OF MR. FAIRLIE CLARKE.

Stone in the Bladder; Lithotomy.—J. S——, aged five years, residing at Brentford, was admitted with symptoms of stone in the bladder. They were not severe, and had not been noticed for more than four weeks. The patient having been placed under chloroform, a stone was detected without difficulty, and a few days later it was extracted by the lateral operation. It proved to be of lithic acid variety, and weighed about ninety-two grains.

On the second day the patient passed some water by the urethra. On the nineteenth day all the urine was voided by this means, and the wound was found to have nearly closed. It was then touched daily with lunar caustic until it had quite healed. The patient was discharged on the forty-fourth day.

Hernial Protrusion through the Abdominal Walls.—Elizabeth D——, aged forty-eight, a married woman, was admitted with a large and painful swelling in the left iliac region. She stated that a year and a half ago she was seized with severe pain in the left groin, which extended over the whole of the left side of the abdomen, and was accompanied with rigors, nausea, and vomiting. Linseed poultices were applied, and in the course of a fortnight an abscess pointed above Poupart's ligament. When it burst, it gave exit to a large quantity of thick yellow matter, and it continued to discharge more or less for nearly a year. It did not appear that there was any history of inguinal or femoral rupture, or that the abscess had any deep origin.

On admission, the patient complained of severe pain in the left iliac region and the loins. On being examined in a standing posture, a swelling, of about the size of half a cocoa-nut, was seen in the left iliac region. To the touch it was tense and elastic, and a distinct impulse could be felt in it when she coughed. When the patient lay down, the swelling subsided, and the aperture through which it protruded could be clearly made out to the left of, and a little below, the umbilicus. It was an irregular space, with sharply-defined edges, of about the size of the palm of the hand, and in this area were two or three scars of abscesses. It appeared that to the extent of this space the abdominal muscles had completely disappeared; they had, as it were, suppurated away, and there remained nothing more than the skin and the subjacent fascia. Through this aperture there had occurred a hernia, which had given rise to the painful symptoms of which the patient complained.

A few days after admission, she was seized with pain and tenderness in the situation of the swelling, and, after the application of poultices, one of the old scars opened and discharged some thin pus. The patient was kept in bed, and the sinus was dressed with stimulating lotions.

In about three weeks' time a large pad was secured with a bandage to the weak part of the abdominal wall, and the patient was allowed to get up. In a few days more she was discharged, with an order for a suitable truss.

DREADNOUGHT SEAMEN'S HOSPITAL.

CASE OF ACUTE PETECHIAL TYPHUS.

(*Communicated by* Dr. MACFIE CAMPBELL, House-Surgeon.)

JAMES W——, aged thirty, was admitted into the hospital on March 1st, for a soft chancre on the glans penis. He was employed in the coasting trade between Newcastle and London, and had never made a longer voyage than that to Spain. None of his fellow shipmates were in any way ill, nor had he been in the way of infection, so far as he knew.

March 6th.—To-day he complains of headache and lassitude, and some pain in the back. He passed about two pints of water during the night.

7th.—Is very feverish. The tongue is coated; the soft palate of a dusky-red hue; the eyes suffused. Pulse 100; temperature 102·2°. Passed a large quantity of water again last night; the bowels freely open. To have milk diet, with two pints of beef-tea. Ordered a drachm of liquor ammoniæ acetatis in an ounce of water, three times a day.

8th.—Pulse 104; temperature 102°. Tongue swollen and red. Complains of great pain in his back. Both legs are covered with a bright papular, measly eruption. The spots are close together, and fade on pressure. The bowels have been opened twice this morning.—Afternoon: His back and body are of a bright-red colour, resembling scarlatina. There are patches of purpura on both thighs and arms, particularly vivid on the flexure of the thighs. His skin does not ecchymose when pinched. He spits a good deal of bloody froth. To take five grains of sesquicarbonate of am-

monia, and fifteen minims of tincture of chloroform in an ounce of water every four hours.

9th.—Pulse 102. The bowels have not been opened to-day. The purpuric eruption is very bright all over the thighs, body, legs, and arms. There are a few spots on the face; sordes on the lips; the breath is very offensive. He spits a great deal of bloody froth. To take brandy-and-water every hour.—Evening: Pulse 100; temperature 99·6°. Bowels costive. Ordered a castor-oil enema, with which nothing came away. A large poultice to be applied to the back. Eyes bloodshot. Makes very little water, and that is of a dark amber colour. Ordered thirty grains of chloral hydrate. The dose was repeated in an hour, as the first had not acted.

10th.—Pulse 104; temperature 96°; respiration 28, laboured. Slept a little last night; slightly delirious this morning. Face dusky; less pain in the back. Urine of a clear dark amber colour; specific gravity 1012, acid, slightly albuminous, containing traces of blood and epithelial scales; chlorides much diminished. As the bowels had not been opened, he had another enema, but without effect.—Twelve o'clock: Is in a comatose condition, with bloody froth continually issuing from his mouth. Breathing stertorous. Subsultus tendinum.

He remained in this comatose condition until death, which took place at about two o'clock. A quarter of an hour afterwards the body had a very strong cadaveric odour, and the skin was of a peculiarly livid hue.

Autopsy, twenty-two hours after death.—The rigidity was considerable. The neck, face, shoulders, and back were of an intensely dark-purple colour; the chest, legs, and arms were thicky covered with dark purpuric spots.—Head: There were large patches of ecchymosis in the periosteum above each temporal muscle; some small patches of effused lymph on the arachnoid; fluid in the subarachnoid space; vessels much engorged; brain-substance firm, presenting a few red points on section; about a drachm of fluid in the ventricles. The cord and membranes were firm and much congested.—Thorax: The right lung was very œdematous and intensely congested; bronchi filled with yellowish fluid. Weight, 1 lb. 9½ oz. The left lung was adherent at the back; in the same condition as the other, with much emphysema. Weight, 1 lb. 12½ oz. There was some fluid in the pericardium; the right ventricle was empty; in the left there was a small fibrous clot; the valves were healthy. Weight of heart, 11 oz. All the thoracic viscera ecchymosed.—Abdomen: The liver was cirrhosed; left lobe contracted; edges rounded; stained yellow; had a distinct smell of bile; lobules well marked. Weight, 4 lb. 3 oz. The gall-bladder contained two drachms of dark bile. The capsule of the spleen was thickened and studded with patches of ecchymosis; the substance very firm and anæmic, like raw beef or light hepatised lung. Weight 8 oz. The kidneys were healthy, but enlarged; the lining membrane of the pelves ecchymosed; putrefaction commencing. Weight, 1 lb. 5½ oz. The mesentery was congested; the colon full of ecchymosed patches. The small intestines were full of scybala; no ecchymosis; some congestion of Peyer's patches and glands.

Remarks.—Dr. Campbell prefers to consider this case one of petechial typhus rather than of cerebro-spinal meningitis, as, though corresponding in many respects with both these affections, in his opinion, it more closely resembled the former. Many of its symptoms strongly resembled those presented by the epidemic of cerebro-spinal meningitis described by Dr. Mapother of Dublin as malignant purple fever. The most important symptoms, however—the intense headache, the persistent vomiting, and the painful retraction of the head—were wanting; nor were the appearances observed in the post-mortem examination entirely in favour of that disease. In calling it petechial typhus he has taken as his guide the typical case given by Dr. Felix von Niemeyer in his Practice of Medicine (English translation of the seventh German edition, vol. ii., p. 565), and has prefixed the qualification *acute* on account of its rapid fatality. The analogy, he observes, is nearly perfect, except that in the above-mentioned account no mention is made of the profuse bloody sputum, and that violent delirium is noted as a constant symptom. The spleen, which is there described as being large and soft, was in this case found to be small and firm, but this discrepancy may perhaps be accounted for by the extremely rapid course of the disease. Dr. Niemeyer does not make any mention of petechiæ in the kidneys nor in the large intestine. As there was no history of a rigor, Dr. Campbell is unable to calculate the duration of the disease in this case from its commencement to its termination.

PROVINCIAL HOSPITAL REPORTS.

NEWCASTLE-UPON-TYNE INFIRMARY.

THE following operations (for the record of which we are indebted to Mr. F. Page) were performed in this hospital on Tuesday, March 7th:—

1. *Lithotomy.*—A uric-acid calculus weighing 146 grains was removed by Dr. G. Y. Heath from the bladder of a boy, aged four years, who had shown symptoms of stone for nearly two years.

2. *Lithotomy.*—An ovoid stone weighing an ounce and a half was removed by Dr. Heath from the bladder of a man who had urinary symptoms for five years.

In each case a tube was introduced into the bladder, and retained there for twenty-four hours, as is customary in this infirmary. It is now several years since a death from lithotomy occurred in the Newcastle Infirmary. Since August, 1859, upwards of thirty patients have been successfully operated upon by Dr. Heath. The eldest of these was seventy, and the youngest two, years of age.

3. *Amputation of the Arm.*—Dr. Heath removed the left arm of a healthy-looking man at the shoulder-joint, for malignant disease involving the lower half of the humerus, by means of a square flap cut from the deltoid. The patient was a stonemason, and two years ago had fallen a distance of six or eight feet and thus fractured his humerus two inches above the elbow. Two months later, when the splints were permanently removed, a considerable thickening was noticed at the seat of injury, which continued to increase until it reached the size of an ostrich's egg. Very little blood was lost during the operation. On a microscopic examination the tumour was found to present the characteristics of a malignant growth. It was noticed that the lower fragment of bone was far more implicated than the upper. Proper union between the two seemed never to have taken place. The man stated that he had been able to work in part at his trade for twelve months after the removal of the splints.

Two other limbs have very recently been removed at this infirmary above the knee for malignant disease of the fibula. In the one case (Mr. L. Armstrong's) the disease was of seven months' standing, the skin had already ulcerated, and extensive bleeding had taken place; in the other (Dr. Heath's case) the tumour had existed only six months, but was rapidly increasing in size, and the superjacent skin was discoloured.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

TUESDAY, MARCH 14TH, 1871.

MR. CURLING, F.R.S., PRESIDENT, IN THE CHAIR.

THE new President, on taking the chair for the first time, thanked the Society for the honour it had done him—an honour which was the more grateful to him, as to its Transactions he had contributed most of his published works. He had experienced difficulty in taking the chair after such a man as Dr. Burrows; but he did it with a hearty determination to support the prestige of the Society.

ON XANTHELASMA PALPEBRARUM, AND ITS SIGNIFICANCE AS A SYMPTOM.

BY JONATHAN HUTCHINSON, F.R.C.S.,
SENIOR SURGEON TO THE LONDON HOSPITAL,
SURGEON TO MOORFIELDS AND TO THE HOSPITAL FOR SKIN DISEASES.

The author stated that his paper concerned the buff or yellow patches, not very unfrequently seen near the inner angles of the eyelids, which had been described by Dr. Addison under the name Vitiligoidea plana, and which had been accurately figured by Mr. Wilson, Hebra, and several

other authorities. He preferred Mr. Wilson's name because it had reference simply to the very conspicuous colour of the patches, and to their location; and because it involved no suggestion of similarity or relationship to any other malady. For some years the author had been engaged in collecting facts as to the clinical meaning of these curious patches, in the hope of finding that their presence might furnish a clue to their possessor's diathesis or state of health. More especially he had wished to investigate the correctness of Dr. Addison's belief (founded on but very few cases) that they were usually associated with disease of the liver. The paper was based upon the narrative of about thirty cases, and was illustrated by a series of coloured drawings. The chief conclusions arrived at are summed up in the following propositions:—

1. That xanthelasma never occurs in children; whilst it is fairly common in middle and senile periods of life.

2. That, in a large majority of cases, its subject is not seriously ill, nor in any danger of becoming so.

3. That, in a small proportion of very severe cases, jaundice, with great enlargement of the liver, are met with.

4. That, when jaundice occurs, it almost always precedes the xanthelasmic patches.

5. That the form of jaundice is peculiar, the skin becoming of an olive-brown, or almost black tint, rather than yellow, and the colour being remarkable for its long persistence.

6. That the enlargement of the liver may be very great, and that it may subside, and the patient regain good health.

7. That in many cases in which there has been no jaundice, there is yet the history of frequent and severe attacks of functional disturbance of the liver.

8. That xanthelasma occurs more frequently in females than in males, the proportion being two to one.

9. That in all cases the xanthelasmic patches appear in the eyelids first; and that not in more than about 8 per cent. do they ever extend to other parts.

10. That the patches invariably begin near the *inner* canthus, and almost invariably on the *left* side.

11. That xanthelasmic patches are of little value for purposes of prognosis, being usually the evidences of past rather than of coming disease.

12. That it seems not improbable that they may result from any cause which has induced repeated changes in the nutrition, and especially in the pigmentation of the skin of the eyelids. Thus they occur to those who have been liable to have dark areolæ round the eyes, whether from "sick headaches," ovarian disturbance, nervous fatigue, pregnancy, or from any other cause. Hence their frequency in "bilious subjects," and in the female sex.

13. That it is probable that of the causes mentioned under which the pigmentation of the eyelids may be disturbed, disorder of the liver is the most powerful; hence the fact that the more extensive cases are usually associated with hepatic disease.

The author stated, amongst other points, that when these patches are seen on the eyelids, it is usually safe to suggest that their possessor has been the subject, at some period of life, of very severe and frequent sick headaches, and that in two-thirds of the cases this suggestion would be confirmed. He added that he had met with some cases in which some of the less usual evidences of disturbance of the nervous system in connexion with sick headaches had also been observed. In one instance, a man had been liable during his headaches to become temporarily quite blind of one eye, and now and then of both; and another, a woman, was liable to sudden loss of muscular power in her arms. Two cases were related of great enlargement of the liver, with "black jaundice," both of which disappeared after a while. In one of these the patient became insane during the jaundice, but recovered afterwards, and is now well, but with large patches of xanthelasma.

As regards the pathological anatomy of the patches, the author preferred to reserve his facts, which were as yet incomplete. He showed drawings, however, to illustrate the important fact, not previously noticed, that the patches sometimes show evidence of other changes in the skin besides the accumulation of yellow material. Thus it is not uncommon for sebaceous glands to become much enlarged, and plugged by pellets of indurated secretion, blackened at the free extremity; and in one instance a number of large thin-walled serous cysts were developed. In these rarer forms of the malady, its real nature is usually disclosed by the presence of some small spots of the characteristic buff tint. It is also recognisable from the fact that, whether the disease be cystic or sebaceous, the morbid conditions are arranged above and below the inner canthus, in what may, for convenience, be styled the *xanthelasmic positions*. Like xanthelasma in its more typical forms, they are also after a time accurately symmetrical.

Dr. HILTON FAGGE said that in his cases there was no evidence of disease of the liver. In one instance the condition had been hereditary for four generations. It was impossible to draw the line between plain and tuberous vitiligoidea. In Dr. Pavy's case both varieties were present. In her, the spots began on the hands before appearing on the face. The jaundice, he had said, was light, not dark. The dark spots were on the mucous membranes.

Mr. SPENCER WATSON had seen a case in a woman, aged forty, of dusky complexion, and liable to bilious attacks. There were a number of buff patches on the left eyelids, but hardly any on the right. She had disturbed vision at times, as from incipient glaucoma.

Mr. BRUDENELL CARTER said the condition of luminous zigzags surrounding the object looked at was common in hard brain-workers, and was thought to belong to hard brain-work, not to disordered liver. The fact that xanthelasmic and temporary amaurosis had been so often noted together by Mr. Hutchinson might depend on his connexion with Moorfields Hospital.

Dr. SYMES THOMPSON had seen the clergyman referred to in the paper. The jaundice was not from obstruction, but was nervous. The recovery was complete. Such conditions might depend on defective innervation.

Mr. HUTCHINSON, in reply, thought Mr. Carter's suggestion fair. He still thought they might distinguish vitiligoidea plana and tuberosa. He would like to have heard more of the enormous liver which subsided.

ON CENTRAL AMERICA AS A RESIDENCE FOR CONSUMPTIVE PATIENTS.

BY JAMES WYNNE, M.D.,
GUATEMALA.
(*Communicated by* SPENCER WELLS, F.R.S.C.)

The object of this paper is to draw attention to the elevated table-lands of the Pacific slope of tropical America, and especially of Guatemala, a city situated 5000 feet above the sea, in lat. 14° 37' 32" N., having a mean temperature of 66° F. The climate is that of perpetual spring; the air is tonic and invigorating, yet not too stimulating. Consumption is very rarely met with, and phthisical patients coming from a distance, if able to lead an open-air life, make remarkable progress. Twelve cases are recorded. Of these four died, five recovered, and three remained under observation. Of the fatal cases all but one were seen for the first time when the disease had reached a hopeless stage. It is suggested that the value of the Central American plateaux in phthisis should be tested by sending out twenty patients in an early stage of the disease for a few years, or, better, for permanent residence.

After a few words from Dr. Webster, Mr. SPENCER WELLS explained that he had brought the paper chiefly for the purpose of exciting a discussion on the effects of climate.

Dr. BAKEWELL said the condition of these countries, their liability to revolution, the filth, bad food, and bad lodgings, all greatly militate against their ever becoming health resorts.

PATHOLOGICAL SOCIETY OF LONDON.

TUESDAY, FEBRUARY 21ST, 1871.

MR. J. HILTON, F.R.S., PRESIDENT, IN THE CHAIR.

DR. MORELL MACKENZIE exhibited a specimen of Constricted Trachea and Syphilitic Deposits in the Liver, which had occurred in a man aged thirty-nine. The symptoms were those of bronchitis, and there was dulness at the lower part of the right side of the chest in front. The prominent symptom, however, was dyspnœa of a very severe and paroxysmal character. Several times the patient was, for many hours, quite unconscious, pulseless, and with

scarcely perceptible respiration. Between the attacks the patient was well, and even gained flesh. He died suddenly, in an attack of dyspnœa. The trachea, on post-mortem examination, was found, about an inch above the bifurcation, to be contracted to the size of a goosequill by a puckered cicatrix; there was no thickening external to the trachea. There were numerous deposits of yellow matter in the liver, and a similar deposit on one kidney. The lungs were much congested and emphysematous.

Dr. MORELL MACKENZIE also exhibited a specimen of Growths in the Larynx of a Dog. The subject from which it had been taken had suffered from feebleness of voice, dyspnœa, and stridor for nine months. The animal became emaciated, and a veterinary surgeon who was called in considered the lungs were extensively diseased, and advised a dose of prussic acid. On post-mortem examination the lungs were found to be quite healthy, but in the larynx several neoplasms were found. One of these, the size of a small bean, was situated at the posterior part of the left vocal cord, and a smaller one on the same part of the right vocal cord. There was also a fringe of very minute growths along the ventricular bands. Dr. Mackenzie remarked that he believed this specimen to be unique, though there were examples of laryngeal growths in the horse and cow, in the museums of Dresden and Fribourg; and there was one specimen of a growth in the larynx of a horse in the museum of the Royal Veterinary College of London. He had little doubt that if the growths were searched for in the larynx of dogs, they would be found to be not at all uncommon.

Dr. MOXON exhibited specimens from a case of General Colloid Cancer of the Skeleton. This case, he said, he brought before the Society because he never saw one before, and did not find such a one on the register of the Society. The characters were very certainly those of areolar gelatinous cancer. There were numerous growths on the skull, vertebræ, sternum, and ribs. The only other parts affected were the corresponding lymphatic glands. Most parts of the tumours showed gelatinous areolar cancer of the usual type; but there were parts that ran into the characters of sarcoma. His belief was that these elements represented transitional forms from cartilage. Very similar appearances are often found in the tumours from the parotid region in the neck, which vary from mucous tissue to cartilage. The colloid matter was, however, more plentiful in these specimens than is usual in the cervical tumours. The extensive diffusion of the tumours in the skeleton, and in no other part, was interesting; and several such cases have been recorded.

Dr. MOXON likewise exhibited specimens showing the Change of Diffused Miliary to Softening Grey Tubercle. The first specimen was from a young man who came into Guy's with tuberculous pyelitis and cystitis. He lay on his back confined to his bed for two months before death, and latterly signs of chest complication appeared. In this case the interest lay in the fact that a distinct gradation of small grey tubercles into cavities was seen, with all intermediate stages of yellowness preceding the softening. This would not, Dr. Moxon believed, be a very unusual thing; rather it would represent an instance of a very common course; but in the usual examples which occurred the disease was so limited to the lung, and so situated in it, that other constructions could be raised on the facts. Thus, to mention two of these: first, when cavities and tubercles were present it might be said these were not "true" tubercles; and secondly, it might be said that the tubercles had arisen secondarily to the cavities by a mode of local infection comparable to the infection in the celebrated inoculation experiments. This case, in a peculiar and in a very rare way, was insusceptible of these explanations. For the trueness of the tubercle was shown by its being part of a general diffused tuberculosis with all the characters of the so-called "general tubercle" secondary to the tubercular pyelitis, and the idea of a local infection would not be entertained by anyone who observed the very gradual change from the small cavities to the grey tubercles, and the very slight degree of difference between the successive stages of change. Dr. Moxon wished to place the case on the records of the Society as showing that the diffuse grey tubercle of miliary size was subject to the expansive and destructive changes that pneumonic tubercle showed, and that those changes were indistinguishable from and anatomically identical with pneumonic tubercle. The other specimen was from a man who died of gangrene of the foot, from exposure while weakened by phthisis. It showed, as seen in a drawing, the structure of the large masses of iron-grey tubercle sometimes called "granular pneumonia." The granules were seen to be tubercles receding and shrivelling, making clusters of wasted minute knots, which knots formed at the surface of the cluster, and wasted as they were carried, as it were, to the centre by the rise of new tubercles outside them. Thus large masses of tubercle arose, and the black change that accompanied all active chronic lung-disease came about and defaced them. Dr. Moxon brought this specimen because two patches in the lung so clearly and beautifully showed that the grey knots in this form of tuberculous affection, as in other forms, when more acute in their rise and spread, put on a form identical with the yellow or pneumonic tubercle. In both these patches the centre was occupied by old cornified tubercle; but the outer part in one was composed of recent grey tubercles; and in the second the otherwise similar patch was composed of soft yellow tubercles, the two being evidently varieties of the same change.

Dr. MOXON also showed a specimen illustrative of Chronic Pneumonia in Syphilis, and specimens of lardaceous spleen and kidneys, syphilitic orchitis, and subacute pleurisy, with pneumonia were exhibited. They were from a man who, when carrying a sack of barley, suffered fracture of the cervical spine by another sack falling on him. The case appeared important, as showing what a great degree of muscular exertion a man so diseased was capable of. The pleurisy was certainly in part recent; it had a new surface of soft lymph, and the roughness of this, with its transverse ridges, showed that rubbing must have been rather vigorous. The state of the kidneys, spleen, and liver certainly made his muscular power remarkable. The pneumonia seen in the lung when fresh was remarkable because of the roundness of the edges of the patch, like the advancing curve of a spreading eruption. The belief that pneumonia was caused by syphilis had its advocates. The question is discussed rather fully by Lancereaux. A white hepatisation was the chief condition mentioned in a series of cases of infantile syphilis in Virchow's *Archiv*. Authors on "Fibroid Phthisis" adduce syphilis among the other conditions. Dr. Moxon said that in the relation of syphilis to lung disease these propositions were true: 1, that phthisis would run through its course in syphilitics in an ordinary way; 2, that a chronic white hepatisation, with tendency to circumscribed gangrene, occurred especially, but not only, in persons certainly syphilitic; and, 3, that syphilitic gumma occurred in small quantity in some cases. From the present and other cases, Dr. Moxon believed that circumscribed scars on the pleura, such as were seen here, and insidious chronic pneumonia, occurred especially in syphilitic people.

Mr. DE MORGAN showed a specimen of Lympho-sarcoma, removed from the left pectoral region of a healthy man, aged forty-five. Four years ago he fell out of health, and all his body, save the hands and feet, became the seat of hard œdema, which lasted for many months, and then disappeared. There was no disease of any internal organ, but a short time afterwards he noticed a tumour in the neck, which increased rapidly for a time, and then diminished. There is now a hard, almost bony-feeling tumour, with one or two smaller ones, in the left inferior triangle of the neck. The chest tumour began about a year ago, and for the last two months had increased to such a size as to keep his arm at nearly a right angle with the body. On removal, the tumour, which weighed 4¼ lb., was found by Mr. Arnott to be of the nature chiefly of lympho-sarcoma. The points of pathological interest were: the connexion, if any, between the previous œdema and disease of the lymphatic system, the probable identity in nature of the neck and chest tumours, and the remarkably healthy condition of a patient with this disease, which is generally associated with progressive debility.

Mr. ARNOTT brought forward a case of Tumour of the Lower Jaw, for which Mr. De Morgan had removed half of the bone. The patient, aged forty, had had a hard tumour of the gum, of the nature of ordinary epulis, which had been removed last November. At about that time, two small, soft tumours appeared in the jaw, anteriorly; one near the base, which grew rapidly, and two or three harder on the posterior surface; and the bone was removed. These softer tumours proved to be myeloid; the harder ones more

of the nature of ordinary epulis. The appearance of myeloid in a person of the age of the patient is unusual; and the case further illustrated the tendency to concurrent formation of numerous tumours, not necessarily of the same nature.

Mr. WAGSTAFFE showed an exceedingly rare specimen of probable Fibrous Tumour of the Heart, which occurred in the practice of the late Mr. Nunn, of Lyndhurst. It was removed from the body of a child three months old. The child was well developed, and quite healthy until a few weeks before its death, when it had occasional transitory spasms, in one of which it died suddenly. The tumour was globular, about two inches in diameter, pinkish-white on section when first examined, and of a very firm and uniformly fibrous texture. It was situated in the substance of the septum ventriculorum, and projected equally into the two ventricles, but the muscular substance of the septum was still spread over the tumour. Microscopically it appeared to be mainly composed of well-developed white fibrous tissue. Its structure, its occurrence at so early an age, and the absence of blood or inflammatory products, argued against its being simply a result of the organisation of blood-clot, or of inflammatory lymph, or of syphilitic deposit, but rather pointed to its being a true fibrous tumour developed in the substance of the septum. There was no evidence of its being malignant. Mr. Wagstaffe said there was only one case on record in the Transactions of the Society of a true simple tumour of the heart, and that was of a peculiar cystic form. He considered the specimen, therefore, unique. Its occurrence in a child three months old, without interference with nutrition, and with such slight symptoms, made it a case of extreme clinical interest.

Mr. WARREN TAY exhibited four (out of five) Fatty Masses removed from a Ranula. They varied in size from a hazelnut to that of a walnut, were of the consistence and aspect of firm butter, and uniform throughout in section. Microscopic examination gave a negative result. Chemical examination by Dr. Tidy showed the composition to be fatty, with a little phosphate of lime, the fat being in his opinion in the condition of adipocere. The specimen was considered unique as regards any fatty contents of a ranula, and also as to the presence of adipocere in the living human body.

CLINICAL SOCIETY OF LONDON.

FRIDAY, MARCH 10TH, 1871.

MR. ERICHSEN, VICE-PRESIDENT, IN THE CHAIR.

DR. TILBURY FOX brought before the notice of the Fellows seven cases of ringworm of the arms and hands, of an extensive and severe form, in seven men, in whom the disease had been contracted from a white pony whose body was studded over with patches of tinea tonsurans, having analogous characters to those seen in ordinary ringworm of the scalp. The disease occurred only in those men who had groomed the pony: in three men brought to Dr. Fox by Dr. Drage, of Hatfield, and who were the ordinary grooms of the owner of the pony; and in four others, attendants of the Royal Veterinary College, where the pony had been sent for treatment. The patches of ringworm were chiefly in the front of the arms; they were large, more infiltrated than usual, and, in one case, markedly herpetic. In one of the other cases the central portions of the circular patches were studded with minute pustules. Dr. Fox attributed the severity of the disease to the large amount of fungus of a very luxuriant kind being sown at one time upon the arms of the men. In one man parasitic sycosis was produced. Hairs taken from the pony, exhibited under the microscope, were seen to be ensheathed in spores and mycelial threads, both of which invaded the shaft of the hair; and scales taken from a patch on the arm of one of the men were also placed under the microscope, and showed the mycelium of the fungus, which Dr. Fox pronounced to be the trichophyton, sprouting in all directions throughout the epithelial scales. Dr. Fox stated that he had never seen the transmission of ringworm from the horse to man before, nor had Prof. Spooner in his forty years' experience; but he referred to the history of an epidemic which occurred some years ago amongst horses and mules in the valley of the Borne in Savoy, and which was reported upon by Prof. Papa, in which a disease similar to that in the present seven cases was observed to be communicated to man from the horse. Bazin had also noticed the same occurrence. He remarked, however, that the transmission of tinea from the ox and calf to man was common enough. He concluded by remarking that the seven cases brought under the notice of the Society illustrated the fact that ringworm of the surface varies considerably in aspect, according to the amount and rapidity of growth of the fungus, from a mere erythematous desquamating patch (so-called parasitic pityriasis) to a pustulating surface resembling and liable to be mistaken for an eczema; the two extremes being connected by transitional forms, represented by an abortive herpes, a well-marked herpetic patch, or a desquamating circular area bounded by an herpetic edge; the occurrence of so much effusion as is necessary to produce herpetic vesicles being dependent upon the amount of irritation set up. Veterinarians who asserted that "ringworm" was common in the horse, and might be communicated to man, had not brought forward any proof that the disease which they styled "ringworm" was really parasitic, and he had no doubt many non-parasitic eruptions of animals were classed under that term. The disease in the white pony referred to was, as proved microscopically, undoubted tinea tonsurans.

The CHAIRMAN asked if the degree of virulence of the disease was the same in man in similar cases where it had been communicated from the lower animals?

Dr. DUFFIN commented on a case that had come under his notice, in which a cat had propagated the disease to children.

Dr. FOX said that in the cases described by Professor Papa the disease assumed an exaggerated form in certain of the cases.

Mr. COX (a veterinary surgeon) said that ringworm was common in horses, and he believed it was often communicated to man.

Mr. PRITCHARD, one of the Professors of the Veterinary College, averred that in his own experience he had never seen the transmission of ringworm from horse to man, nor had Professor Spooner in his forty years' experience.

Mr. COOPER FORSTER closed the discussion by mentioning that his own groom, some four or five years ago, had ringworm which was undoubtedly caused by the presence of a horse in his stable suffering from the same disease.

Mr. HENRY LEE then read notes of a case of Removal of the Tongue for Cancer. He said that this was a case in which the patient suffered very severe and continued pain. Nearly the whole of the tongue was removed. The symphysis of the jaw was divided, and the tongue was tied in four separate portions. Some elastic thread was then, in addition, passed round its base. The use of this, as explained by Mr. Lee, was to prevent any absorption of matter as the other ligatures became loose. As the part ulcerates, the elastic thread contracts, and thus always remains tight. Some weeks after the operation a piece of bone came away, which was supposed to be a portion of the os hyoides.

To a query put by Mr. Erichsen as to the means used to promote union of the divided portions of the jaw, Mr. Lee replied that mastication was good, though the union was not perfect.

Mr. CALLENDER was reminded of a case that had occurred at St. Bartholomew's Hospital, in which the operation at once relieved most excruciating pain. He preferred the plan of removing the mucous membrane of the floor of the mouth, and then operating with the écraseur.

Mr. WILLETT had removed the tongue with the knife, and had had no trouble from hæmorrhage, though some difficulty occurred as to the symphysis.

Mr. FORSTER said that the credit of division of the gustatory nerve, referred to by Mr. Callender, was due to Mr. Hilton. The form of ligature described by Mr. Lee was tolerably familiar to many surgeons in operating for nævi. He objected to the division of the symphysis, and believed that in most cases Middledorpf's operation was the best.

Mr. ERICHSEN recapitulated briefly the various modes of operating in these cases, and alluded to the diagonal mode of cutting through the jaw.

Mr. CHRISTOPHER HEATH had tied the lingual artery in two instances in the digastric triangle for this disease, but considered the results unsatisfactory.

In reply to a query, Mr. FORSTER said that in the operation recommended by him pins were introduced so as to isolate

the diseased mass, care being taken to keep the pins distinct from each other.

Mr. CALLENDER spoke to the fact that hæmorrhage does not usually occur when the écraseur is used, whether wire or chain is applied.

Mr. LAWSON spoke emphatically as to the freedom of pain as a result of the operation.

Mr. ARNOTT opined that the division of the gustatory nerve was not a successful proceeding as to its results.

Mr. ERNEST HART thought that the glands as well as the tongue should be extirpated.

Mr. GASCOYEN doubted the advisability of removing the tongue at all, as death commonly takes place about six months after the operation from sloughing pyæmia or active mischief in the glands.

Mr. DE MORGAN believed that the operation was recommendable because it frequently gave great relief from pain; that the pain usually returned chiefly in the glands, which could not be entirely extirpated on account of their arterial surroundings. He agreed with the observations of Mr. Arnott as to the frequency of hæmorrhage when the écraseur was used, but said that it was usually controllable. Great difficulty existed in keeping the wires hot, on account of the moisture of the invested tissues.

Mr. HEATH, in reply to a question, said that he had tied one lingual only, opinions differing as to the utility of securing both.

Mr. HENRY LEE replied. He doubted very much whether in any case of cancer of the tongue the whole of the diseased structure could be removed. He adhered to the propriety of dividing the symphysis, and believed that both écraseur and electric wire were useful, though hæmorrhage sometimes occurred to a considerable extent with the latter; but in spite of the observations that had been made, his faith was not shaken in the plan of operation that he had just described to the members of the Society.

Reviews and Notices of Books.

General Outline of the Organisation of the Animal Kingdom, and Manual of Comparative Anatomy. By THOS. RYMER JONES, F.R.S., Professor of Comparative Anatomy in King's College, London. Fourth Edition, illustrated by 571 Engravings. pp. 886. London: Van Voorst. 1871.

THE present edition of Professor Rymer Jones's well-known work can scarcely be said to be more than a reprint of the third, which was published in 1861. It has, indeed, been enlarged to the extent of forty-five pages; but this is chiefly, if not altogether, occasioned by the addition of a considerable number—no less than 148—woodcuts, many of them very artistic, as well as valuable, in elucidating and illustrating the text. We are well aware how tedious and difficult a matter it is to insert into the text of an old edition of a comprehensive work like that before us, even the more important of the discoveries and advances that have been made in the course of a decade. And we were not surprised to find one of the older school of comparative anatomists like our author decrying indirectly the alterations in nomenclature and classification that have recently been introduced "from a conviction that they are rather calculated to embarrass than to facilitate the progress of the student." In spite of all this, we were scarcely prepared to find so little of recent work incorporated into the text, and so few references made to the labours of modern writers, both in England and abroad.

The first chapter, on Classification, is singularly meagre, only giving, in the compass of four pages, the systems of Aristotle, Linnæus, Hunter, and Cuvier. What a contrast to the series of systems, almost erring on the other side, were they not arranged so intelligibly, of Bronn, in his famous "Classen und Ordnungen des Thierreichs." Surely, if no other had been given, that of our own great morphologist, Huxley, might have been given *in extenso*, and compared—a most instructive contrast—with that of Cuvier. In this chapter, too, we think something might have been said upon the Darwinian theories, which, whether ultimately proved to be right or wrong, are of sufficient importance to deserve a brief notice, and have at any rate a direct and immediate bearing on classification.

The second chapter is occupied with the Protozoa, and embraces the following subjects—Rhizopoda, Foraminifera, Polycystina, Actinophrys, Noctilucæ, Amœbæ, Sponges, and Thalassicollæ. The separation of the Rhizopoda—especially when this is made to include such forms as Gromia, Miliola, and Cristellaria—from the Foraminifera on the one hand, and the Amœbæ on the other, is incomprehensible to us; and we think some allusion should have been made to the researches of Häckel, and to his suggestion of founding a subkingdom of Protista. But it is scarcely surprising that Professor Jones does not allude to Häckel when we find that the foot-note on page 5, intended to be a guide to students desirous of referring to other works, has no reference of later date than 1852; and though this note is to some extent supplemented by others in the course of the chapter, yet we do not find any of these are later than 1857. Surely the researches of Jones and Parker and Carpenter, and a host of others, might have been mentioned. Something might have been said about the Globigerina, which enters so largely into the composition of the ooze that is even now forming and raising the bed of the Atlantic; and something about the relations which all these bear to and have in common with the mycelia of the Myxomycetes and other fungi. In the remarks on the Sponges we look in vain for a reference to Kölliker's "Icones Histiologicæ" or to Bowerbank's "Spongiadæ," published for the Ray Society in 1864 and 1866; whilst some such rough diagram as was given by Mr. Huxley in his lectures at the College of Surgeons would materially facilitate the student's comprehension of the cause and direction of the currents. Professor Jones remarks that "to have asserted that flints were merely sponges petrified would have appeared, before the revelations of the microscope disclosed the real nature of these very common stones, the height of rashness and absurdity, and yet few facts in natural history are better ascertained." Notwithstanding this statement, and the fact that a thin section often reveals in its interior a variety of organisms, which Prof. Jones assumes were "obviously introduced whilst it was in a soft and living state," we venture to doubt this explanation, and are much more disposed to refer it to some surface action, some alteration in temperature or composition, which has led to a precipitation of silica, from its solution in the water of the sea, in the irregularly nodular form characteristic of flint.

The chapter on Infusoria, like the last, wants working up, and very inadequately represents the knowledge that has now been accumulated. We had expected to meet with a digest of Stein's magnificent work, with those of Lachmann, Claparède, and Mecznikoff, which (though the former are indeed referred to) might have advantageously replaced Professor Jones's refutation of Ehrenberg's earlier views on the Polygastrica, which were, even in the previous edition, styled "rather antiquated."

In the chapter on the Cœlenterata the arrangement of the orders has been altered with advantage, but here again we miss the results of recent research. To take one point. In speaking of the movements of the Medusæ, he remarks that "the locomotive disc, when cut into, seems perfectly homogeneous in structure, nor is any fibrous structure easily recognisable to which its movements could be attributed; nevertheless, in the larger species, its inferior surface appears to be corrugated, as it were, into minute radiating plicæ, which seem to contract more energetically than the other por-

tions." Now this point has been very carefully investigated by Brücke, who has demonstrated not only that the characteristic movements are effected by muscular tissue, but that the fibres of this tissue are distinctly striated; whilst, amongst the Ctenophora, Agassiz has shown that fasciculi of muscular fibres are found under and between the radial canals; and Kölliker, in his "Icones Histiologicæ," describes similarly arranged fibres of muscular tissue.

In the chapter on the Echinodermata, although a considerable number of new illustrations have been added, the text remains almost unaltered, not the slightest reference being made to the later works—as, for instance, under the head of Crinoidea, to such well-known papers as those of Wyville Thomson and Carpenter's very important researches on Antedon rosaceus, or to Michael Sar's "Mémoires pour server à la Connoisance des Crinoides Vivants;" and so we might go through every chapter in the book, the latter part, embracing the Vertebrata, being scarcely more satisfactory than the first. The structure of the skull, and its division into several vertebral segments, maintained by Owen, with the archetype skeleton, is, as we might expect, preserved; but Mr. Parker's treatises on the shoulder-girdle, and on the structure of the head of birds, are utterly ignored.

We regret that we are not able to speak in terms of commendation of Professor Jones's treatise; and the more so since, if properly worked up to the present time, it would have constituted just such a book as we should have been disposed to recommend to those who might have been desirous of acquiring a good general knowledge of the organisation of the animal kingdom; and is, moreover, one that in its general plan contrasts favourably with some of the more recent works on the same subject. Even as it stands, however, it will furnish to the student much important information. The language is perfectly clear and intelligible throughout; and as far as the selection, execution, and number of the drawings, and the paper and type go, they reflect the highest credit both on the author and on his publisher.

Lectures on Aural Catarrh, or the Commonest Forms of Deafness, and their Cure. By PETER ALLEN, M.D., &c., Aural Surgeon and Lecturer on Aural Surgery to St. Mary's Hospital. Small 8vo, pp. 271. London: J. and A. Churchill. 1871.

WE imagine that the medical practitioner will be quite ready to confess that, of all diseases which he is called upon to treat, there are none in regard to which his practical knowledge is less satisfactory than those of the ear. In this work Dr. Allen deals very lucidly with one class of aural affections of common occurrence—viz., those arising from catarrh, and succinctly tells his readers how to examine, what to look for, and where to find the disease in cases of catarrh. We happen, moreover, to know (and this is the most important point) that the treatment he adopts and recommends has been attended with ample success in many cases.

The first four lectures are devoted to an examination of the labours of Toynbee and others; the methods to be adopted in illuminating and examining the aural canal and membrana tympani; the physiology of hearing, and the anatomy of the ear, so far as these relate to the subject of the work; these several matters being illustrated by appropriate engravings. Lecture 5 is devoted to a description of various modes of inflating the middle ear; and Dr. Allen describes and figures a modification of the Politzer bag, to which is attached a nasal pad, which, in place of the tube inserted into one nostril, is pressed against the nostrils, and through two openings in which air can be passed, by squeezing the bag, into each nostril at the moment the Eustachian tubes are opened by the act of swallowing, so as to inflate the tympanum, or overcome any obstruction in the Eustachian tube. His method of using the bag is also figured: Dr. Allen likewise describes a tympano-manometer, for determining the exact state of the membrana tympani when an inspection cannot be obtained; it is a hollow tube, containing fluid, and of a U-shape, one end of which is placed into, so as to block up, the auditory canal; the nostrils are then closed, and a forcible attempt at expiration is made, by which the air in the tympanum will be increased in volume, if the Eustachian tubes are patent, causing an alteration in the level of the fluid in the tube. The subject of catheterism is noticed in Lecture 6. The subsequent half-dozen lectures are devoted to a description of the symptoms, cause, and treatment of aural catarrh in its various acute and chronic, simple and purulent, forms; the general remarks being illustrated by the narration of typical cases of disease occurring in the author's practice.

Dr. Allen treats his subject, not only in a very practical way, but in a thoroughly scientific spirit, and the busy practitioner will find this little work amply repay perusal, and an excellent guide in the management of a common class of affections.

Guy's Hospital Reports. Edited by C. HILTON FAGGE, M.D., and ARTHUR C. DURHAM. Third Series. Vol. xvi. pp. 588. London: J. and A. Churchill. 1871.

THE present number contains many excellent papers. Mr. Poland contributes an opening article of about 130 pages on the "Treatment of Subclavian Aneurism." Dr. Pye Smith follows on "Left-Handedness," and on "Retro-peritoneal Hernia," and, together with Dr. Howse and Mr. J. N. C. Davies-Colley, contributes conjointly "Notes on Abnormalities observed in the Dissecting-room during the Sessions 1868-9 and 1869-70." The history of an outbreak of diphtheria in the obstetric wards is given by Dr. Braxton Hicks. Dr. Wilks follows with three practical papers—one on "Adherent Pericardium as a Cause of Cardiac Disease," a second on "Valvular Diseases of the Heart," and a third on "Cases of General Paralysis, with Observations on Nerve Pathology." Dr. Moxon contributes a paper on "Syphilitic Disease of the Cord," and a very good one on "Atheroma," in which he shows reason for considering that this condition ought to be regarded as an inflammatory process rather than a degenerative one; Mr. Hinton on the "Treatment of Perforations of the Membrana Tympani," and on the "Relation between Chemical Composition and Nutrition"; Dr. Fagge on "Murmurs connected with Mitral Contraction"; whilst articles from Mr. Bader, Mr. Durham, Drs. Habershon and Phillips, also appear in the Report, whose contents are as varied as they are excellent. We must not omit to mention a statistical account, by Dr. Steele, of the patients treated at Guy's Hospital during 1869; for it contains materials of a very suggestive and practical character.

Foreign Gleanings.

IODIDE OF POTASSIUM IN THE SECOND STAGE OF BRIGHT'S DISEASE.

DR. CRÉQUI, of Brussels, has employed this remedy with great success in the second—i.e. the parenchymatous—stage of this complaint, and explains the failures of other practitioners by the small doses they ordered. Dr. Créqui begins with six grains a day, and gradually ascends to six drachms, or half an ounce, per diem. To secure the toleration of the salt he adds a little opium, or some subnitrate of bismuth. Several Italian medical men have used the iodide in a

similar manner with good results; some cases, however, ended fatally. It is supposed that the iodide of potassium has the power of limiting the morbid secretions of the connecting tissue which occurs round the Malpighian bodies in parenchymatous nephritis.

PROFESSOR MANTEGAZZA'S EXPERIMENTS.

The *Gazetta Italiana di Milano* contains an essay of Prof. Mantegazza on experiments carried on under his direction at the laboratory of experimental pathology of the University of Pavia. It will suffice to state that the experiments were intended to study the action of pain on digestion and nutrition. They were, as the Professor himself confesses, agonising to the animals subjected to them, and distressing to the experimenters, and simply proved that loss of appetite, great weakness, and a peculiar imbibition of moisture were the result of the pain inflicted. It is added that no alteration of the spinal marrow could be detected after the agony had been protracted for *one month*—very meagre results of unpardonable cruelty.

UTERINE FLEXIONS.

Dr. Malachia De — Christoforis (*Sardegna Medica*) corrects such flexions with Dr. Meadows's sound and pessary, and states that, in three cases of dysmenorrhœa and sterility, he succeeded in a most satisfactory manner, as the patients were freed from pain, menstruated regularly, and became pregnant. The author says expressly that this treatment is useful only in such cases as are simple, and uncomplicated with inflammation, tumours, or other pathological states, especially adhesions of the fundus uteri with surrounding parts.

ARTIFICIAL TANNIN.

L'Imparziale, of Florence, states that Professor Schiff has succeeded in preparing this substance synthetically, combining for that purpose some elementary principles. Such discoveries bring to mind Dr. Bence Jones's quinine, and the experiments of Dr. Richardson for the synthetical production of certain pathological conditions.

A NEW DISINFECTANT.

The *Scalpel*, of Brussels, states that the Chemical Society of Frankfort recommend a new disinfectant, composed of gun-cotton moistened with a solution of permanganate of potash. Ordinary cotton does not answer because it decomposes the permanganate.

INHALATIONS OF GLYCERINE IN CROUP.

Dr. Stehberger, having found some time ago that such inhalations were very useful in chronic hoarseness, was led to use them also in croup. He noticed that thereby the inflammation was diminished, moisture induced, and that the patient began to expectorate freely. Dr. Stehberger uses Siegle's spray apparatus; and when the glycerine is not thought perfectly pure, he adds a little water. The inhalations may, according to the nature of the case, be repeated every half hour, hour, or hour and a half. They should be continued until the patient's voice is perfectly clear.

HOSPITAL FOR WOMEN.

LECTURES ON FLEXIONS, TORSIONS, AND DISPLACEMENTS OF THE UTERUS, BY DR. PROTHEROE SMITH.

LECTURE I.

DR. PROTHEROE SMITH began the course of lectures by saying that it would be impossible within the prescribed limits to treat of all the subjects included in the title of "Flexions, Torsions, and Displacements of the Uterus." He would therefore confine his remarks to the most common dislocations of the unimpregnated uterus, leaving the other topics to a future occasion. In giving chronologically the bibliography and history of uterine dislocations, he traced the rise and progress of gynecology, referring to ancient literature to show how scanty was the knowledge on this subject.

Though recognised in the fifth century, it received but little notice till after the eighteenth. From this date to 1838 the subject of uterine flexions and versions received some attention from British and foreign authors; but their observations were scanty and incomplete, resulting from insufficient means for diagnosis, and consequently their conclusions were meagre and faulty. The present advanced state of knowledge on these subjects could be traced mainly to the efforts of modern pathologists during the last thirty years.

To meet the need which had been previously felt, in 1847 the Hospital for Women was founded for the exclusive study and practice of diseases peculiar to the sex; the advantages arising from such he and his colleagues were desirous to make available to the profession by means of lectures, as well as by clinical instruction in the wards. After enumerating the various opinions of those who had written during the past forty years of the present century, and quoting extensively from their works, Dr. Protheroe Smith referred to his official connexion with Dr. Rigby, at St. Bartholomew's Hospital in 1836; when, from insufficient means of diagnosis, the result of practice was very discouraging. Since better methods of investigating uterine diseases had been discovered, they were consequently more easily detected, and more effectually treated. Drs. R. Ferguson, Rigby, and Tanner, and Mr. Charles Moore, formerly officers of the Hospital for Women, were mentioned as aiding the advancement of uterine pathology.

Finding dysmenorrhœa and sterility were often benefited by dilatation of the cervix uteri, Dr. Protheroe Smith had made, in 1841, an instrument (exhibited at the lecture) after the model of Heurteloup's lithotrite. With this, besides other advantages, he and Dr. Rigby had been able to dilate the cervix uteri, to measure the extent and direction of the uterine cavity, and to detect several instances of deformity and displacement of the uterus. This dilator he sent to Professor Simpson. To him, however, we are indebted for an instrument which, for simplicity of structure and facility of use, is unrivalled; the uterine sound being the most efficient means of detecting and redressing abnormal uterine dislocations.

By the use of this sound, experience soon proved that instead of such affections being, as heretofore considered, rare, they were very common, and were easily diagnosed and treated. As in the majority of such cases, hyperæmia, if not inflammation, forms the initiative of these maladies, he advocated the employment of the speculum before the use of other instruments, whether for diagnosis or treatment. For this purpose Dr. Protheroe Smith preferred that form he had exhibited at the Royal Medical and Surgical Society in 1844, and which enables the operator to employ simultaneously tactile examination and visual inspection, especially useful in certain torsions and flexions of the cervical portion of the uterus.

Though differing from Sir James Simpson, who believed that, practically and pathologically, there exists no difference, excepting in degree, between flexions and versions of the uterus, the lecturer observed that it was but due to the memory of that able and painstaking physician and physicist to say, that of all, and there were many, who might justly claim to have improved our knowledge of abnormal dislocations of the uterus, and uterine pathology in general, he may be declared paramount.

After describing the various forms of these morbid deflections, the diseases for which they may be mistaken, their mode of detection by taxis, uterine sound, and speculum, their antiphlogistic and mechanical treatment by means of Simpson's intra-uterine supporters, &c., he proceeded to treat of their complications and the means for their diagnosis and treatment. He referred to his papers published in the *British Record* in 1848 in elucidation of the subject. There he remarks: "The essential difference between flexions and versions are—1st, that in the former the os and cervix preserve their normal positions; and, 2nd, the axis of the uterus in flexion is curved, and straight in the forms of obliquity." To this, however, we can here only refer, as a complete description of these affections with their various deviations, any wishing correct views of their pathology—the period of their occurrence, their predisposing and proximate causes and attendant ills, whose name is legion. The mode of investigating these diseases, and the manner of using the various instrumental aids to diagnosis and treatment, as well as the results of his observations on the indications for treatment, will form the concluding remarks of the brief abstracts of these lectures.

THE LANCET.

LONDON: SATURDAY, MARCH 25, 1871.

WE are happy to learn that the Council of the College of Surgeons, at its meeting in full committee on Tuesday last, became at length thoroughly awakened to the position in which the action of the combined committees of the three corporations had landed it. It became evident that the College was asked to sink its individuality in favour of a combination which would be satisfactory to nobody, and which, as we have again and again pointed out, would not meet the demands of the medical body and the public for a single portal of entrance to the profession. After considerable discussion, we understand that the Committee confirmed the action of the Councils of the 7th and 14th of October, 1869, which was fully commented upon in our columns at the time, and the gist of which is contained in the following resolution carried on those occasions:—"That it is the opinion of this Council that there should be instituted a single examining board for each division of the United Kingdom, before which every person who desires a licence to practise should appear, and by which he should be examined; and that a diploma from either of such examining boards should entitle the holder to practise medicine, surgery, and midwifery in any part of her Majesty's dominions."

After thus satisfactorily agreeing upon a principle diametrically opposed to that of the "conjoint scheme," it was hardly likely that the details of the scheme, upon which we have before animadverted, would prove acceptable; and, accordingly, amendments upon nearly all the propositions were carried, which would, if accepted by the other corporations, give an entirely new complexion to the arrangement, which has now, we imagine, received its *coup de grâce*.

It may be well for us to take the opportunity of reminding our readers that the resolution of the Council respecting a *single* board, which we have quoted above, was also carried in precisely similar terms at the meeting of upwards of 250 Fellows and Members of the College of Surgeons on the 24th of March, 1870, and also at a meeting of the Medical Teachers' Association, comprising members of all three corporations, on the 18th of March of the same year. It is evident, then, that all those who have paid any attention to the subject hope for a *single* and not a *conjoint* board of examiners to guard the portal of entry to the profession; and we believe that it is only from interested motives that the corporations, and notably the Apothecaries' Society, have attempted to obstruct the necessary legislation required for the purpose by propounding the conjoint scheme, which is now virtually exploded.

The Apothecaries' Society has lived on the credit of the Act of 1815 for more than half a century; and it is time that its pretensions should be disposed of. It was and is a mere trading body, into whose hands a certain amount of power was put by the Government because the College of Physicians was shortsighted enough to refuse to recognise the general practitioner. Because this Society did its work well in its generation, which is now gone by, is that any reason why necessary reform and legislation should be suspended for fear of trenching upon the rights and hurting the feelings of a City corporation? The best proof of the little hold that the Apothecaries' Society has upon the profession is the fact that so few are content with the Apothecaries' licence alone. We should like to know what percentage of even its own licentiates could tell how the examiners of the Society are elected and who are the present holders of office; and though we notice persistent efforts in certain quarters to bolster up the credit of the institution, we very much doubt if the profession at large would move a finger to prevent the Apothecaries' Society being relegated to its proper function—that of dealing in drugs.

NEXT in importance to the constitution of a new central sanitary authority, must be placed the constitution of the various local boards by which the influence of sanitary laws must be brought to bear upon the general public. In determining how best to avoid in future the perpetual conflicts of local jurisdiction by which we are now at once embarrassed and disgraced, the Commissioners have had to deal with no inconsiderable problem; and their solution of it, although possibly a correct one, will to most persons be unexpected, or even startling. They propose that, excepting in the case of the metropolis, the board of guardians shall be everywhere the local sanitary authority; and they base this recommendation upon the ground that such boards are representative, that they exist everywhere, that they possess a complete organisation and staff, that their medical officers furnish them with a direct channel of knowledge about the diseases prevailing in their unions, that they are in constant communication with any existing sanitary authorities that do their duty, and that, within limits which only experience can define, the same staff may render assistance in both the public health and the relief department. The Commissioners also propose to strengthen the hands of boards of guardians by altering their tenure of office, so that they shall be elected for three years, one-third of the whole number retiring annually in rotation, as in the case of Town Councils at present. It is hoped in this way to render them sufficiently independent of their constituents for the development of a systematic policy in dealing with the questions that come before them; and it is maintained, with some show of reason, that the perverse and foolish parsimony of many existing boards is due to the annual election of the whole body of guardians. Men who take office only for a single year have no heart to commence undertakings which it will take three or four years to complete; and to the completion of which they have no power to bind their successors.

Notwithstanding this kind of reasoning, we confess that the proposal to glorify boards of guardians, and to turn them into local sanitary authorities, fills us with something much akin to dismay. We suspect the Royal Commissioners have little practical acquaintance with the guardian as he is; and that they do not know the full measure of his

ignorance and obstructiveness, or the extent to which resistance to all improvement has become an abiding tradition in country board rooms. It is very significant that a board cannot do an act of common honesty to an overworked officer, or make any unusual provision for the welfare of the poor, without giving rise to a perfect shower of encomiums upon the thoughtfulness and generosity displayed. In country places, moreover, the annual election is a mere farce; and Farmer A and Farmer B know that their seats are safe as long as they please to occupy them. In provincial towns the board is generally the appanage of the weaker of the two chief political sections—the stronger reserving the Town Council to itself, and surrendering the board, by way of compromise, to adversaries whom it is sometimes necessary to conciliate. The result is that the guardians are often frothy party declaimers, who attend in order to discuss questions of Imperial politics under the text of JOHN DOBBS's loaf and weekly allowance, and who help their friends to obtain board contracts. From the farmer who proposed that the gas-lamp should be lighted with "*ile*," down to the petty tradesman of the town, the normal constituent of a board of guardians is simply incapable of discharging the duties of a sanitary authority; and would, moreover, in a vast number of cases, be himself a flagrant and constant offender against any efficient or reasonable sanitary law. The scriptural rule, that those only who have been faithful in a few things shall be trusted with many, cries out against the proposal of the Commissioners; and the present state of country unions and poor relief may be taken as an index of what sewerage and water-supply would become, if boards of guardians could control them.

The only way out of the difficulty is afforded by the prospect, or we should rather say by the hope, that the imposition of new and more conspicuously important duties will both attract a higher class of candidates for office, and will also make respectable ratepayers more careful than at present to record their votes. Guardians are now commonly elected by about a tenth of those who form their nominal constituencies; and an ordinary political contest presents no elements which appeal to any but earnest political adherents. It might well be, however, that increased opportunities of usefulness, increased powers of rating, and generally higher and more important functions, might in time bring the right men into the right places. If this expectation were fulfilled all might be well; but if it were not fulfilled, the proposed sanitary law would be crippled by perpetual and unseemly conflicts between the central and the local authorities.

Another point to which we must refer is the proposal that the necessary inspection by the central authority should be accomplished by the present inspecting staffs of the two departments, with such assistance as may be necessary. In other words, it is suggested that the barristers under whose very noses every abuse connected with the Poor Law has grown and flourished, until pointed out by independent observers, should be continued in office, and made responsible for the due carrying out of statutes relating to the public health. The proposal is simply monstrous. The nominal or perfunctory inspection under the Poor Law has been a sufficiently grave scandal, but to continue the same system under a Minister of Health would be an outrage against reason. The inspectors of the new department should be partly medical men and partly engineers; and the existing itinerant officials of Gwydyr House should at once receive the retiring pensions which their distinguished services have so justly earned.

HE is a rarely happy practitioner to whom the subject of puerperal fever is not a matter of urgent and personal importance from time to time. There are medical men whose midwifery practice seems an unbroken piece of physiology, who can say that they go from year to year without witnessing death, or even serious illness, from the process of parturition. Most of us have known such men, and some of them are not famous for obstetric skill. But the rule is otherwise. Puerperal fever, notwithstanding the improvement in general and midwifery practice, is still too common. It still occasions a large annual mortality. It causes more pain and dissatisfaction to the practitioner than perhaps any other case which he encounters in practice. It is for these several reasons that we devote some attention to this subject. We are the more encouraged to do so in consideration of a most valuable paper on this disease by Dr. HICKS, which lies before us in full in the twelfth volume of the Transactions of the Obstetrical Society for the year 1870; and which was followed by a discussion, eliciting the opinion of the Society on this momentous question. We regard Dr. HICKS's paper as a most important addition to our knowledge, and a valuable guide to the formation of sounder views on the subject. Dr. HICKS's communication consists of a short report of eighty-nine cases, with remarks. The treatment is not given; and though a large proportion of them were fatal, there is an absence of any record of post-mortem appearances. The account of the cases is, for the most part, just such an account as could be given by a consulting physician called to see them once or more, and who was pursuing a certain classification of them. The cases occurred for the most part in private practice; they extend over a series of years, and are not selected further than is implied in the exclusion of cases occurring after serious manual or instrumental operations. The reason for this exclusion is obvious. Any undue laceration or bruising of parts might be supposed to be itself the cause of puerperal fever. Though the importance of this cause of puerperal complications has probably been much over-rated, yet it is well excluded in an attempt to ascertain the more subtle kind of influences which determine the occurrence of puerperal fever in a lying-in woman.

We are all familiar with the innumerable classifications of puerperal fever of older authors. Inflammation was supposed to be the essential evil, and the cases were distinguished by the *locale* of the inflammation. Very different, and very much more wise and truthful we think, is the principle of classification adopted by Dr. BRAXTON HICKS. In the older classification distinctions turned upon type or symptoms. In Dr. HICKS's paper classification turns upon the supposed or ascertained cause. Now the defect of this system of classification is obvious and soon felt, for the

cause cannot always be made out. But the classification is more useful, and is found to explain a larger number of cases than might have been expected. Thus, of Dr. HICKS's 89 cases, no less than 68 were explicable by an ascertained or probable cause, the nature of which will appear immediately; 21 only were left to be grouped by themselves as not being traceable to any other cause than the mere puerperal condition itself, though even in these it would be wrong to assume that one or other of the causes which we shall see were so largely traceable in the 68 cases was not in operation.

But to come to the details of the classification itself. Dr. HICKS, we have said, divides his 89 cases into two groups—thus: Group I., *having an ascertained or probable cause*; and Group II., *in which the cause was uncertain*. Group I. is divided into the following classes: Class 1, Scarlet Fever, 37—(A) with the usual rash, 20; (B) without rash, 17, 15 of whom had been distinctly exposed to the fever, and 2 had probably been exposed. Class 2, Erysipelas, 6. Class 3, Diphtheria, 7. Class 4, Typhus or Typhoid, 2. Class 5, Decomposition of Uterine contents, 9. Class 6, Emanations from Sloughy Wound, 1. Class 7, from Puerperal Fever, 1. Class 8, from Mania (?), 4. Class 9, Pyæmia from Sore Nipples, 1. Group II., *cause uncertain*, total 21—(A) symptoms appearing before or during labour, 4; (B) symptoms appearing about the third or fifth day, 17.

It will be seen at a glance how different the view of puerperal fever here suggested is from the view held by the older writers. It must be quite understood that Dr. HICKS does not pretend that his cases are fully and exhaustively reported. But, admitting this, there is evidence enough to convince us, if any such were still wanting, that zymotic poisons are a source of terrible danger to lying-in women, and give rise to the essential symptoms of puerperal fever; and that, of these poisons, conspicuously the most important is that of scarlatina. In 20 of the first group of cases the usual rash was observed; and in many instances the connexion of the patient with scarlet fever, either through her children or friends, or, we must add, her medical man, was only too plainly shown. It is not asserted that the manifestations of the disease were complete. The soreness of the throat was especially not a marked feature of the disease, but it did occur more or less in a certain proportion of the cases. But it seems impossible to doubt that a large proportion, if not all, of the 37 cases of the first group were really labouring under the effects of scarlet fever poisoning, modified by the puerperal condition, and probably by the fact that in a number of the cases the patients had previously had the disease. Only 6 cases seemed to be caused by the poison of erysipelas; 7 occurred in such association with diphtheria and with such diphtheric symptoms as to appear the result of diphtheric poisoning, and it is noticeable that in 2 of these diphtheric cases scarlet fever was present.

It is not denied, of course, that local poisoning of the system from the uterus may and does take place, and give rise to toxæmia and puerperal fever; 9 out of 89 cases are attributed to this cause, and it is probable that in many of the other cases blood-poisoning from the uterus aggravated the case and determined a fatal result. This cause of puerperal fever is always to be borne in mind, and special steps of prevention and treatment are to be taken. Among preventive measures, those which secure a thorough contraction of the uterus, as pressure and the administration of ergot, are the most important; and amongst remedial measures, cleansing and disinfecting injections of the vagina and uterus.

Without treating Dr. HICKS's facts as if they were an actual and exhaustive demonstration of the connexion between zymotic poisons and puerperal fever, we may receive them with thankfulness as a very suggestive contribution towards a sounder view of this most objectionable disease. We must look closely to the surroundings of our lying-in patients, with a view to rigidly keeping far away from them all zymotic and especially all scarlatinal poisons. And we must take one great therapeutical lesson out of the facts. We must no longer be deluded, by the presence of rigors and local pains, into the error of regarding puerperal fever as an inflammatory disease, and giving mercury and other fancied antiphlogistic remedies. Dr. HICKS's facts seem to us to make an end of the possibility of the continuance of this delusion. In the great majority of those cases of puerperal fever characterised by pyrexia, quick pulse, delirium in some degree, diarrhœa, and prostration, with or without some local pain, we have to do with blood-poisoning, for which no worse remedies than mercury and other depressing medicines could be prescribed. We do not include here, of course, cases of localised cellulitis, though even in them the use of mercury requires great caution. But the common forms of puerperal fever, we repeat, must, till the contrary is shown, be regarded either as cases of modified zymotic disease or of toxæmia from uterine sources; for the treatment of which a plentiful supply of fresh air, nourishment, and local cleansings, are the prime and indispensable requisites, and for which mercury is a poison.

THE opponents of the Contagious Diseases Acts have not succeeded in substantiating any of the various charges that have been urged against the working of them. We have opportunities of learning the opinion of some perfectly impartial people as to the changes that these Acts have effected in the garrison towns at which they have been applied. The scenes that occurred at such places as the Portsmouth Lines and the Hard were simply a disgrace to our civilisation. We are assured that the improvement has been very striking, and that those who knew what these places were seven or eight years ago would scarcely realise the change. We have also had unequivocal testimony to the amount of good that has been both directly and indirectly accomplished among the women themselves through the instrumentality of these Acts. At Aldershot the appearance and behaviour of the women have much improved in every way, and there is no longer the rioting and disregard of decency that were wont to be encountered. What has taken place at Plymouth is already well known. At Cork, again, the change has been most striking. When the Acts first came into force there, the state of the streets at night was disgraceful from the inebriety and obscenity met with. Now Cork is, for its size, as quiet and orderly a city at night as any other. As a practical proof of the efficacy of the Acts, it may be added that out of the original number of 400 women at Cork, but 181

remain, of which latter there are usually in hospital, prisons, and workhouses, 104, leaving only about 77 in Cork, Queenstown, and in the area of ten miles around them. In 1870, 34 women were restored to their relatives, 1 married, 9 entered homes and refuges, and 27 left the district, many of them to seek an honest livelihood elsewhere. As regards the army, it is simply a fact beyond controversy that the amount of enthetic disease of the worst class has been steadily decreasing in those districts where the Acts have been enforced. Stump orators and eccentric impulsive men and women go about uttering the most inaccurate statements with a dogmatism that could only be warranted by their declaring well-known truths. It will be truly lamentable if pusillanimity in the Government, or the dread of a noisy opposition, should lead to the abandonment of these Acts, notwithstanding that the verdict of the Royal Commissioners may be an unmistakably favourable one.

Medical Annotations.

"Ne quid nimis."

THE MEDICAL TEACHERS' ASSOCIATION.

THE meeting on Friday last was occupied with the discussion of the new regulations of the College of Surgeons. A committee, appointed at the previous meeting to obtain from the College authorities some more precise information respecting the course of Practical Physiology, reported that it was intended to include Histology, Physiological Chemistry, and Physiological Physics; but that the Court of Examiners of the College was not prepared to define the duties of the teacher more particularly, nor "to diminish his responsibility by laying down any precise directions as to the way in which he should fulfil them." Some doubt was expressed as to the meaning of "physiological physics"; but Dr. Sibson suggested that they were those physical laws bearing upon the functions of the body, such as circulation, respiration, and locomotion, without a proper understanding of which it was impossible for the student to follow physiological study.

It appears to us that the Council of the College of Surgeons has done wisely in demanding a practical study of physiology, and also in not defining too strictly the course to be pursued. The course will necessarily vary somewhat in the different schools, but the element of competition will render it necessary for each to do the best it can for its own students; and a very few years' experience will enable the College authorities to decide which courses do and which do not come up to the required standard.

With respect to Practical Surgery, the Council of the Association had recommended that it should be a winter course, embracing the several compulsory subjects of the course, but not the performance of the operations on the dead body, which is not compulsory for the membership of the College, and could not be undertaken during the period of dissection. It was recommended, and agreed to, that the performance of the operations should commence in April, when those students who wished to undertake them could do so, and others of the class would have the opportunity of witnessing their performance.

With regard to the certificate now required "of having been individually engaged at least twice a week in the observation and examination of patients during not less than three months," it was announced that the Council of the Association had ascertained that this instruction might be given on either in- or out-patients, or on both; and the recommendation of the Council that the said instruction should be given in the first summer session was agreed to.

A committee appointed to inquire into the mode in which examinations at the various schools were carried on having reported that there was no uniformity of practice in the several schools, or among the teachers of each school, a resolution of the Council was affirmed recommending to the members of the Association the adoption of a distinct tutorial system, by which students should be assisted in every stage of their studies in addition to the oral and *viâ voce* examinations of the lecturers.

THE SNAKE POISON.

DR. FAYRER has at length concluded an unusually interesting series of papers, the publication of which was commenced in the *Indian Medical Gazette* in 1867. The medical and general public fully appreciated the humanity which prompted Dr. Fayrer to undertake his exhaustive investigation, and the skill and industry he has displayed in carrying it out; and we are glad to learn, on the authority of the above-named journal, that the Indian Government has accorded its thanks to him for his labours. The sacrifice of life in India by snake-bites is truly enormous, and, unhappily, no antidote has been brought to light. The sanguine hopes that were entertained in Australia have been entirely dispelled by the results of experiments—at least so far as the venomous snakes of India are concerned. In point of relative deadliness Dr. Fayrer is inclined to consider that the cobra, ophiophagus, and daboia are nearly on a par. They are quite capable of destroying life in a full-grown dog in half an hour, and sometimes in much less time; and very frequently, according to Dr. Fayrer's belief, man has succumbed within an equally short period, though generally the time is much longer. Although there are differences in the symptoms produced by the poisonous bites of the different thanatophibia, there are none of any great physiological or pathological import. These differences are more of degree than of kind. They all point to exhaustion and paralysis of the nerve centres; every function fails rapidly and vitality is soon extinct. The blood, in the cases of the lower animals, nearly always coagulates firmly after removal from the body after death from colubrine snakes; but it remains permanently fluid after death by viper-poisoning. Snake-poison acts with most vigour on warm-blooded animals; and, generally speaking, the power of resistance is in relation to the size of the animal. So far as Dr. Fayrer's experiments go, venomous snakes are not poisonous to one another, although the less are probably affected by the more poisonous kinds. They are susceptible to other poisons, however, such as strychnia and carbolic acid. The bodies of animals poisoned by snakes are eaten with impunity by men and animals. But the blood of an animal dead from snake-poison is itself poisonous; if injected into another animal it destroys life. Dr. Fayrer is able to congratulate himself on the fact that he has brought his long series of experiments to a conclusion without any accident of a serious nature to those concerned in them. In two cases, however, there was cause for anxiety. In the first a small quantity of cobra-poison was projected into the eye. Snake-poison, be it remembered, is capable of being absorbed through delicate membranes, as Dr. Fayrer's experiments have fully confirmed. Immediate ablution and avoidance of rubbing of the eye removed the poison. In the second case the principal snake-man was bitten by an echis in the thumb; immediate excision and cauterisation of the part was had recourse to, and no evil results followed.

THE CENSUS.

The Registrar-General has issued a letter inviting the co-operation of the press in making known the objects and uses of the census which is just on the eve of being taken. During the course of next week the enumerators will distribute to every house in the kingdom schedules to be filled up, giving certain particulars prescribed by the Census Act in respect of every individual living in these realms on the night of next Sunday week, April 2nd. On the following morning the enumerators will begin their great work of collecting the schedules, which must be completed in one day; and when it is remembered that the number of these schedules will exceed five millions; that in a large number of cases the collectors will have to fill up the schedules owing to inability on the part of the "head of the family" to perform that duty for himself; that a large area of ground has to be travelled over; and that not unlikely there will be the scruples of ignorance or of prejudice to be overcome in not a few instances, the collecting force of 31,920 enumerators does not seem a whit too strong. It is unnecessary that we should expatiate at length on the uses of the census, which Dr. Farr has set forth in a memorandum now lying before us. It is not conceivable that any member of our profession needs telling how important it is, and for what reasons so, that the number and the constitution of the population should be from time to time ascertained with all possible accuracy. Nearly seventy years ago this was demonstrated by a medical man, Dr. Heysham, whose self-imposed labours in making a census of his own city of Carlisle led to results of the utmost scientific value.

But it may not be amiss to remind our brethren that they have it in their power, from their intimate knowledge of and influence with all classes of the community, to do much towards removing some difficulties out of the paths of the enumerators. Dr. Farr says: "The co-operation of all the educated classes, particularly of the clergy, of medical men, and of public writers in the press, is indispensable to the complete success of the eighth census." And we recognise so entirely the force of this declaration, that we make this special appeal to medical men, both in town and in country, everywhere to do whatever may lie in their way for the furtherance of this national work.

THE HISTORY OF PRACTICAL ANATOMY.

In an interesting sketch of the early history of Practical Anatomy, which formed the introductory address to the course of lectures on Anatomy at the Philadelphia School of Anatomy, Dr. Keen has collected a number of curious data respecting anatomical study; and in the notes has given much additional information on the subject.

The false charge against the early anatomists, that they dissected living bodies, is well known, and was the cause of Vesalius's death, since he was shipwrecked while fleeing for his life; but two centuries before his time dissections were made at Bologna. This university was celebrated, also, for its female professors, and even for a female professor of anatomy, Madonna Manzolina, whose preparations still exist in the museum. The revival of learning in the sixteenth century did much for the study of Medicine; and Vesalius in 1537 took the lead as a teacher of genuine anatomy in Padua, and in 1543 he published his splendid work which revolutionised the science. But though professors dissected and lectured, the practice of universal dissection by the student is a matter of quite modern times; thus, in the early half of the last century, a fine was imposed upon any one dissecting outside of Barber-Surgeons' Hall. Wm. Hunter was the first to break through these restrictions, when, in 1770, he built the celebrated Windmill-street School, where he, with John Hunter, Hewson, and Cruikshank, so successfully taught.

Turning to his own city, Dr. Keen shows that, though Philadelphia was only founded in 1682, yet less than seventy years after it was a wilderness (1751) Dr. Cadwalader, a pupil of Cheselden, gave demonstrations in anatomy in Second-street; eleven years later Dr. Shippen, a pupil of the Hunters, became a regular lecturer, and the founder of the medical department of the University of Pennsylvania.

The latter part of the lecture contains an interesting account of the methods of injecting and preparing anatomical specimens from the earliest to the present time. Most of the diligent labour expended upon their injected preparations by the older anatomists was unfortunately thrown away, so far at least as their posterity was concerned; and thus the wonderful productions of Ruysch and Leuwenhoeck are hardly to be found, and then are of no real value. Dr. Keen, also, gives details of the various plans for preserving bodies which have from time to time been in vogue; and in a note quotes the curious account of the embalmment of Mrs. Van Butchell, who is still to be seen at the College of Surgeons, after having been preserved by Wm. Hunter and Cruikshank in the year 1775. The lecture is both instructive and entertaining, and is highly creditable to its author.

THE REGISTRATION OF DISEASE.

The soundness of the principle that a system of death registration needs the concurrent support of a record of disease not necessarily fatal, to be adequate as the basis of an effective public health organisation, has been emphatically affirmed by the Royal Sanitary Commission; indeed, the evidence printed last year was so strong upon this point as to leave no reasonable doubt that, in one form or another, a registration of disease would be recommended. The Commissioners have in their Report summarised the main arguments in favour of the measure. They say that it would keep the public, and especially the central sanitary authority, constantly aware of the state of the public health in every part of the country, and so increase the chances of suppressing outbreaks of disease; that it would lead to juster conceptions of the magnitude of the results of epidemics than the mere record of their fatality can by any possibility convey; that it would most probably bring to light so great an amount of disability from diseases rarely fatal as to show the need for taking steps to diminish the incidence of those diseases; and that it would further show whether, and in what degree, legislation is required for the prevention of diseases dependent on occupations and social habits. Many unknown liabilities to disease in various places, and among various classes, and some immunities also, it is believed, would be revealed, the study of which would suggest means of improving the public health. Another important result which would flow from a registration of sickness would be the correction of errors which are scarcely avoidable in deductions from the death registers; it would show where diseases begin, instead of where they finish, and that is precisely what is necessary to be known for the prevention of disease. Quite likely the effect would be to alter the relative positions of not a few places now assumed to be specially unhealthy, or otherwise. On these and other grounds the Commission arrive at the conclusion that a registration of disease ought to be established.

Having affirmed the principle, the next consideration is how far it should be carried. Upon this point the Commission express themselves very decidedly as to the unwisdom of attempting to register all cases of sickness in the whole population. Their view is that the diseases to be registered "should be those which affect large numbers of

the population, which may be considered as in a greater or less degree preventable by sanitary arrangements, and which are usually not difficult of discrimination." In fact, nothing more than a record of cases of certain specific diseases occurring in the public medical practice throughout the country is contemplated at the outset for collection and publication by the central authority, the details being preserved for local purposes. As to the mode of publication, and the department to which that work should be entrusted, we quote the following paragraph from the Report: "The method of registration may be safely left to the department of the Registrar-General. The subject has already been carefully considered in his office; and a member of his staff, Mr. James Lewis, has shown that returns for such a registration as suggested may be collected from all parts of England and Wales, and arranged and published weekly, [or weekly for London and other large towns, and quarterly for the rest of the country], so as to be at once accessible to both the central and local authorities." The Commission, therefore, recommend that "authority and sufficient means" should be given to the Registrar-General for a registration of sickness, under the direction of the central sanitary authority.

We need hardly say that we entirely coincide with this recommendation, as well as with the principle laid down respecting the character of the proposed registration, both the one and the other being in accord with what has been repeatedly advocated by us.

FEMALE STERILITY.

A VALUABLE PAPER on the Pathological Conditions causing Sterility in the Female, founded on clinical observation, by Joseph Kammerer, M.D., appears as Part VII. of Vol. III. of the Transactions of the New York Academy of Medicine. Dr. Charles Mayer, of Berlin, made a similar contribution to the elucidation of this important subject in 1856. He published the particulars of 272 cases observed by him. Among these he found 2 without uterus, 60 with anteflexions, 37 retroflexions, 35 anteversions, 3 retroversions, 45 cases of vulvitis, and among these 14 with an entire hymen after several years of married life, 51 cases of chronic endometritis, 25 cases of oophoritis, 23 with ovarian tumours, 12 with uterine polypi, 6 with fibroid tumours of the uterus, and 1 case of elephantiasis of the external genitals, while in 6 cases no pathological condition could be found.

Dr. Kammerer points out the importance of observing functional derangements as well as actual lesions, and of paying attention to the subjective symptoms complained of by the patient. Some patients complained only of their sterility; others ignored this, and complained of various functional derangements, chiefly of menstruation, nervous disorders, disturbed digestion, and painful sensations in different parts of the body. Thus the subjective symptoms which induced patients to seek for medical advice are recorded as follows: Dysmenorrhœa, 69; menorrhagia and metrorrhagia, 57; scanty menses, 41; premature cessation of menses, 4; never menstruated, 2; retarded menses, 8; habitual miscarriage, 3; hysteria, 16; nervous headache, 3; vaginismus, 2; intercostal neuralgia, 1. The anatomical conditions found upon examination are thus related, under the following heads:—

1. *Anomalies of position.*—Retroversion, 20; anteversion, 18; dextroversion, 10; sinistroversion, 10; descensus, 8; prolapsus, 1.

2. *Anomalies of uterine tissue.*—Anteflexion, 83; retroflexion, 71; hypertrophy of uterus, 65; atrophy of uterus, 3; atrophy of cervix, 1; infantile uterus, 2; small os, 24; stenosis of the entire cervical canal, 11; stricture of internal orifice, 35; fibrous tumours in walls of uterus, 10; carcinoma, 5; polypus, 6.

3. *Catarrh.*—Of the whole number of 408, 342, or about seven-eighths, were affected with uterine catarrh. In the majority of the cases the catarrh was limited to the cervical canal. But where there was flexion of the body of the uterus, or stricture of the canal, the dilated cavity of the body was the seat of active hypersecretion.

4. *Affections of organs in proximity to the uterus.*—Cases of acute or subacute perimetritis, or peritonitis, 12; firm adhesions from previous attacks of peritonitis, 83; ovarian tumours, 14; peri-uterine tumours, with undefined seat, 7; gonorrhœa, 2; acute colpitis, 1; pelvic abscess, 1.

5. *General conditions and accidental diseases.* — Among these, worthy of remark, were secondary syphilis, 8; valvular disease, and hypertrophy of heart, 5; tuberculosis, 4. In hospital practice only 3 cases were cured. In private practice, out of 201 cases, 25 are put down as having afterwards given birth to full-grown children; 100 were subjected to no treatment, either from unfavourable prognosis, or from want of faith in treatment on the patient's part; 25 still remained under treatment. The most favourable results were attained in cases of flexion, especially retroflexion, and in cases of cervical catarrh. The most unfavourable cases were those of extensive adhesions, of anteflexion, or of small external orifice. Dr. Kammerer had abstained from using the knife in cases of constriction of the external os, trusting to dilatation, which, however, he thinks not so successful as in cases of stricture of the internal orifice. For the catarrh, local applications of nitrate of silver, or injections of compound tincture of iodine, and dilute carbolic acid, strength not stated, were used.

We offer our thanks to Dr. Kammerer for his trouble and care in collecting and reporting facts so well fitted to illustrate an important subject.

THE PARIS WOUNDED.

WE have received a copy of the report upon the Ambulance of the ancient Corps Législatif at Paris, the medical-director of which was Dr. Mundy. The report embraces the period from the 19th September, 1870, to 31st January, 1871. The surgical admissions for gunshot and other injuries amounted to 136, of which 91 were received directly from the field of action, and 45 came from other ambulances. Of the whole number 115 were either cured or dismissed convalescent, and 21 died. The operations numbered 25, of which 7 were immediate and 18 secondary, with 4 deaths, besides 16 cases of extraction of projectiles with 1 death—a case in which cerebral symptoms followed the extraction of the ball which had injured the sphenoid bone. A case of ligature of the femoral artery, for secondary hæmorrhage from a wound of the posterior tibial in a fractured leg, proved successful; two primary amputations of the thigh were both fatal, one from shock twenty hours after the operation, and the other twenty-five days after amputation from pyæmia. One case of primary coxo-femoral disarticulation, for comminuted fracture of the femur complicated with gangrene from frost-bite, proved fatal from shock twelve hours after operation. Out of 10 resections of bone in continuity (2 being immediate and 8 secondary operations), only 1 died, a case of wound of the lower jaw, in which the ball had injured the tongue and œsophagus.

The admissions for diseases of a medical character amounted to 104, with 8 deaths, among which we notice 24 cases of laryngitis; but as all these recovered, we presume they ought to be considered tonsillitis. Various preparations of carbolic acid, Lister's dressings, creasote, and Condy's fluid were employed in the surgical cases. Dr. Mundy, in concluding his Report to the President and

Council, remarks that, notwithstanding the brilliant appearance presented externally of the *salons* of the Palace and the residence of the ancient Corps Législatif, where the ambulance was established at first with 50 beds, and afterwards increased to 100 beds, with a room for officers with 5 beds, this appearance was radically false, judging from a hygienic point of view.

"With an impossible ventilation, since the windows of colossal dimensions are all on the same side, and very high, filled besides with drapery and tapestry fixed to the wall, the magnificent ball-room with a gallery adjoining, besides seven *salons en suite*, constitute a veritable focus of materials for infection of every kind. Extreme strictness in maintaining every kind of cleanliness, moving the wounded to a change of bed (two beds to each wounded person are allowed as far as possible), then disinfection practised unsparingly, care at all hours to have constantly fresh dressings, and continual change of air, have alone prevented hospital gangrene and other infectious maladies from invading the ambulance of the ancient Corps Législatif."

It is well known that the mortality among the wounded in Paris was very great, and that amputations and gunshot fractures of bone proved very fatal from pyæmia. Many of the buildings used as hospitals during the siege were totally unfit for the purpose, and it is scarcely to be wondered at that pyæmia and other hospital disorders broke out in them. But we are assured that these formidable complications occurred among the wounded occupying the best hospitals belonging to the Press ambulance.

RAILWAY ACCIDENTS.

THE medical profession is interested fully as much in the safety of railway travelling as any other portion of the community; in the first place, from due regard to self-preservation in the numerous journeys numbers are obliged to take; and, secondly, from the care they have to give to those who may unfortunately suffer from railway mismanagement. We need make no apology, therefore, for noticing the very interesting Report of the Inspecting Officers of the Railway Department of the Board of Trade upon certain accidents of more or less gravity occurring during the last seven months of 1870.

It will be remembered the North-Western Railway has recently enjoyed a somewhat evil reputation for accidents; and this is hardly to be wondered at when we find twenty-six accidents debited to its account, including the terrible occurrences at Tamworth and Harrow. We are not going to enter into the vexed questions of "locking-points," &c., but we cannot forbear quoting the following remarks from the report on the Tamworth catastrophe, which have a direct bearing upon the injuries caused by railway accidents:—

"The continuous breaks at the tail of the train were of great use, not only in checking its speed, but also in lessening the actual shock to the passengers in the rear carriages, and in protecting them from the effects which they would otherwise have experienced from the rebound of the buffers. The secondary jars so occasioned are, in some cases of collision, more hurtful than the primary shock."

One other report we must allude to, because it refers to the railway more used by London medical men than any other—the Metropolitan, and because the report is very recent, being dated January, 1871. It refers to an accident occurring at the King's-cross station of the Metropolitan Railway on Dec. 24th, 1870, when one up-train ran into another, leading to the slight injury of twelve passengers. Our readers will, no doubt, be gratified to think next time they travel between Gower-street and King's-cross that they may be only *seventy-six yards* from the preceding train, thanks to the arrangement of signals. Colonel Yolland thus animadverts upon it:—

"The Board of Trade have no power to prevent this dangerous mode of working from being continued. Under the existing state of the law, it sometimes sanctions, as in this instance, the opening of a new line of railway, on the understanding that the traffic is to be worked in a special manner, on a particular system suited to the dangerous nature of the line, which experience has proved to be conducive to the public safety. But it is open to the railway company, if it thinks proper, immediately after the line is opened, or after some interval of time has elapsed, to change this system, and adopt a much more dangerous one, as the Metropolitan Railway Company have done in this case, without making any application to the Board of Trade on the subject. I cannot think that such a state of things between railway companies on the one hand, and the Board of Trade acting on behalf of the public on the other, should be allowed to continue to exist."

When we say that an official return shows that there are 234 trains up, and 235 trains down, between these two stations daily, we think it will be a matter of surprise that more need for doctors has not yet occurred.

THE SMALL-POX AND THE MILITIA.

WE perceive that a question is about to be put to the War Minister relative to the calling out of the 3rd Surrey Militia for their annual course of training at Aldershot. It appears that the men composing the 3rd Surrey are mainly drawn from Lambeth, Southwark, and Bermondsey, in which districts small-pox has been raging of late. The regiment proceeds first of all to its depôt at Kingston, *en route* to Aldershot; and the residents at Kingston and its neighbourhood do not at all relish the prospect of having some 700 or 800 men, including recruits, from these small-pox districts quartered in their midst. Mr. Peck, the member putting the question, wants to know whether the regiment could not proceed direct to Aldershot. Without pretending to any special knowledge of military arrangements, we presume that this would be attended with difficulty, seeing that all the soldiers' clothes, stores, &c., are lodged in the depôt at Kingston. Perhaps it might be as well to consider whether the period for training the militia could not be deferred this year, at any rate as far as the 3rd Surrey are concerned; for the garrison at Aldershot may reasonably share the dislike entertained by the people at Kingston in this matter. The camp at Aldershot has not altogether escaped the prevailing epidemic, for some of the soldiers have been attacked with small-pox, and one fatal case has occurred; but the garrison is at present healthy, and it might be well to keep it so.

NEW FLUID FOR THE PRESERVATION OF MICROSCOPIC PREPARATIONS.

MAX SCHULTZE, in the last part of his *Archiv für Mikroscopik Anatomie*, observes that of all fluids now in use for the preservation of microscopical specimens, glycerine either pure or mixed with other reagents, is most widely employed. This substance, though possessing the peculiarity of rendering many tissues transparent, yet unites with fats, and so modifies the differences of refraction occasioned by the presence of fat. Since the introduction of perosmic acid a new disadvantage attaches to glycerine—namely, that if the least trace of the acid remains, the glycerine becomes black, especially around the preparation, and there are no means of removing perosmic acid completely; washing, even when continued for days, being inefficient. Under these circumstances, M. Schultze has been engaged in seeking for a fluid which might replace glycerine, and has, he thinks, discovered one in a nearly concentrated watery solution of *acetate of potash*. According to Dippel, through whose work Schultze first became acquainted with it, it was originally employed by Sanio for the investigation of vegetable structures in place of chloride of calcium; and

Dippel found it serviceable also for preserving animal tissues. Schultze applied the fluid in the same way as glycerine, a drop being allowed to flow over the specimen after it has been prepared in water or serum, without raising the cover. After the lapse of twenty-four hours the preparation is luted down. As the fluid neither dries up nor crystallises out, the specimens may be long preserved in it. M. Schultze states that the solution has now been in use for two years in his laboratory, and no disadvantages have been found to attach to it, whilst it possesses all the advantages of glycerine.

UNIVERSITY EDUCATION.

WITHIN the last few days a most important innovation has been made at both Oxford and Cambridge Universities in the recognition of Science as having equal claims with Literature. Matriculation at either University has hitherto necessitated a certain, and perhaps not too high, standard of classical knowledge; but, for the future, it will be possible for the student of science to matriculate, and to take a degree in science, without troubling himself with the dead languages further than as they have a direct bearing upon scientific subjects.

The method by which this innovation has been brought about at Oxford is by enacting that "The delegates of the unattached students may present persons for matriculation who have satisfied them as to their proficiency in any of the subjects recognised by the University examinations." And thus, though the Colleges will no doubt still keep up the old classical standard, it will be possible for young men who are devoted to science to enter the Universities as unattached students, and to enjoy those great opportunities of scientific study which are freely offered, but are at present but little taken advantage of.

At Cambridge the innovation is the permission to take up French and German, instead of Greek, for the "previous examination," or "little go," and this will doubtless prove acceptable to those who find the knowledge of modern languages absolutely necessary to the pursuit of science. The details of the plan are not definitely settled, having been referred back to the Syndicate for amendment; but the innovation will doubtless be approved, and shortly come into force.

SEAMEN, SMALL-POX, AND THE SANITARY COMMISSION.

THE short comment published in THE LANCET of last week on the vaccination and revaccination of seamen deserves more than a passing notice. We are not prepared to affirm confidently that the existing epidemic of small-pox in England has been introduced into Ireland by merchant seamen; but we know that vessels are very frequently sailing from London and other ports with cases of small-pox on board, that seamen have arrived both in Dublin and Queenstown with the eruption thick upon them, and that no systematic effort has as yet been made to check the dissemination of the disease in our maritime towns. Foreseeing the lamentable consequences, the Dublin Local Marine Board, always liberal in sanitary matters, have authorised their medical officer to vaccinate any seamen who present themselves at the Custom-house for this purpose. It appears, however, that this laudable arrangement on the part of the authorities is likely to come to an untimely end, for the Board of Trade decline to be responsible for the payment of the medical officer, and the Local Board cannot act financially without the permission of those at Whitehall. The latter, naturally perhaps, object to the introduction of the thin edge of any wedge, for the Marine epartment cannot fairly be called upon to vaccinate all our merchant seamen, and we believe that there is no fund from which the expenses could be paid, although a medical inspector exists at most of the chief ports in the United Kingdom. We sincerely hope that the Dublin Marine Board will find some means of remunerating their medical officer.

But we recur to this subject chiefly for the purpose of showing that the reforms proposed by the Sanitary Commission should, if properly carried out, have a distinct and practical bearing in the direction of merchant shipping, both with reference to the many diseases that they assist to disseminate and to the sanitary condition of seamen generally. The facts above quoted give a prominent example of the one; the constant presence of typhoid fever among the crews of our coasters may be cited as to the other. The Board of Trade have done good service in several directions, and notably in the repression of scurvy; but their functions in sanitary matters are in many cases permissive, and as such eminently unsatisfactory. The Report of the Sanitary Commission does little more than touch upon this subject. More vessels are freighted with *materies morbi* (among other things) than is generally imagined; and past experiences, particularly those of a recent date, go to prove that no scheme relative to public health will be complete that does not specially and practically include in its operation the floating as well as the shore population of the kingdom.

THE MURPHY ANNUITY FUND.

A MEETING was held on the 17th inst. at the residence of Dr. Arthur Farre, Hertford-street, Mayfair, for the purpose of organising a plan for providing an annuity for Dr. Edward Murphy during the remainder of his life. After considerable discussion, it was decided to raise within the next two months, if possible, sufficient money to purchase an annuity of £52 a year for Dr. Murphy, and that the subscription list should at once be closed so soon as the sum necessary to secure such an annuity shall have been obtained. It is estimated that the amount required will be about £400, perhaps a trifle less. It was agreed that the proper plan to pursue would be to invest the capital amount in the names of two trustees for the purchase of the annuity, the proceeds of which should be applied to the relief of Dr. Murphy at certain intervals, and in such a manner as would appear most likely to secure the end which subscribers had in view in aiding the fund. Dr. Arthur Farre has kindly undertaken the office of treasurer, and subscriptions may be sent either to that gentleman or to Dr. Tilbury Fox, the honorary secretary to the fund.

"THE DOCTOR AND THE BARRISTER."

UNDER this head the *Surrey Advertiser* gives the particulars of a case, "Stedman and Morton v. Wilkinson," in the County Court at Guildford. The plaintiffs are well-known practitioners in Guildford, and the defendant is a barrister there, who probably thinks less of the value of medical than of legal services. The sum claimed by the plaintiffs for attendance on Mrs. Wilkinson and other members of the family was £26. The defendant paid £14 into Court. We need not go into particulars, for the charges were based upon reasonable and intelligible principles, though the Judge seemed to think that some visits were paid rather because the medical man was "on good terms with the family" than from actual necessity. This impression is always apt to arise, probably to the injury of the practitioner, where the medical man is of a friendly nature; and it shows the wisdom of making medical visits short, and upon some regular system. We lately had to comment

upon a case in which the just charges of a medical man were disputed on the ground that certain of his visits were made in a kindly way rather than from necessity. As we have said, the charges were reasonable—5*s.* for a visit, 7*s.* 6*d.* for a visit in the evening, and 5*s.* for a prescription. One point discussed was the propriety of charging for visits during confinement, and Dr. Stedman defended his doing so on the ground that the illness was more than the ordinary illness of confinement, and involved extra time. Undoubtedly this is a sound principle, though it should only be applied where the unusual illness and the unusual trouble to the practitioner are appreciable by the patient and her friends. It perhaps scarcely includes the case of an irritable lady, who will naturally give a little more trouble than one who is not irritable, but must be taken with her temperament. On a second obstetric occasion Dr. Stedman was more clearly justified in charging for visits upon this principle, as the fee given him was less by a guinea than he expected. On the suggestion of the Judge, an agreement was come to; the defendant agreed to pay £20, and the summons was withdrawn.

MR. PAGET'S HEALTH.

IT is no secret, in London professional circles at least, that for some weeks Mr. Paget has been *hors de combat*, and even in a somewhat critical condition of health, the result of an inoculation with poisonous matter from a post-mortem examination. We regret to hear that abscesses, both in the shoulder and loins, have greatly reduced the strength of Mr. Paget; and that he is now suffering from an erratic erysipelas of a low type, under which his strength has not as yet enabled him to rally satisfactorily. Whilst such a condition must necessarily be one of great anxiety to Mr. Paget's numerous friends, we are happy to learn that no immediate untoward result is anticipated by his professional advisers, among whom are Dr. Gull, Mr. Thos. Smith, Mr. Savory, and others.

QUEKETT MICROSCOPICAL CLUB.

THE annual *conversazione* of this Club took place at University College, on Friday evening, and was very largely attended, as it usually is. The objects provided by the Club for the entertainment of its guests comprised all the optical novelties of the year, and the members, as well as the leading opticians, did all in their power to exhibit objects worthy of the position the Club holds in the encouragement of microscopical science. Photography was on this, as at the last annual *soirée*, well represented. A large and interesting series of photographs of Indian temples and scenery was kindly lent by the India Office; also frames of photographs were lent by Mr. J. Van Voorst, Mr. John Foster, Mr. E. Kiddle, and Mr. A. Shapcott. Mr. Apps exhibited at frequent intervals the marvellous electrical effects produced by means of his well-known induction coil.

THE CONTINENTAL WARNING.

DR. BREWER told the Metropolitan Asylums Managers that the spread of small-pox on the Continent during last autumn warned them that vaccination would, in all probability, be put to the test in this country. What a pity it is that it did not warn the managers that hospitals would for the same reasons be required. In August and September the disease was carried over Germany by the French prisoners of war, and in September thousands of French exiles came over to this country from Paris, and other infected towns. It was morally certain that the disease would spread unless early means of isolation were provided, and yet the warning fell upon the managers in vain. No steps were taken until the 19th of November, and the first bed was not occupied until December, when the epidemic had secured a firm foot-hold in the overcrowded dwellings of the London poor. It is rather surprising that the managers should, after this, take credit for checking the progress and turning the tide of the disease.

THE RELIEF OF THE GUARDS IN DUBLIN.

WE believe that it has at length been determined by the authorities to allow the usual relief of the Guards stationed at Dublin by a battalion from London to take place. It has been thought that little, if any, risk of the spread of small-pox would be incurred by the transfer of a battalion of Guards to Ireland, considering that the great traffic between that country and England has not been stopped during the present epidemic, and that it still remains open. It appears, moreover, that a few cases of small-pox have already appeared among the civil and military populations of Dublin. We may safely assume, we suppose, that the medical officers of the Guards, will, as a matter of course, be directed to subject the soldiers to a careful inspection, and that any of their number who may have been recently affected with small-pox will be left behind, as well as any of the soldiers' families in which the disease may have appeared.

THE SOCIETY OF SURGERY OF PARIS.

THIS Society held its meetings pretty regularly during the siege, the principal topic being gunshot wounds. M. Verneuil, however, brought forward a short time ago a mode of performing almost all amputations, by which pressure on the main vessel is avoided. This pressure is accused of giving rise to arteritis, to phlebitis, and to pyæmia. The learned professor ties the arteries as they are being divided, or begins the amputation by deligating the main vessel. No doubt the shoulder-joint may be disarticulated without pressure on the subclavian; but there are many objections to M. Verneuil's notions as regards amputations of the thigh, leg, or arm.

THE VALUE OF A PROPHYLACTIC.

THE value of vaccination as a prophylactic against the contagion of small-pox may be fairly estimated by a comparison of the immunity it confers on the nurses and attendants at the small-pox hospitals, with the great danger undergone by the attendants of fever patients where no such preventive means are known. In thirty-four years, we are told, there was no case of small-pox among the attendants of the Small-pox Hospital; whilst in 1870 25 per cent. of the whole number of nurses employed in the Fever Hospital took the disease; indeed, there is scarcely a single officer or attendant who is not attacked sooner or later. Moreover, there is proof that where the precaution of revaccination has not been carefully and systematically taken, there is great danger of the spread of small-pox. Last year twenty cases were admitted to the Fever Hospital by mistake, and four of the imperfectly vaccinated staff sickened forthwith.

THE CATTLE-PLAQUE IN FRANCE.

PROF. BOULEY, of the Veterinary School, stated, at the meeting of the Academy of Sciences of Paris on Feb. 27th last, that he meant to speak out boldly as to the cattle-plague; that the people should learn to hear the whole truth, and act in consequence. The plague is raging in Brittany, in Normandy, in the departments of Sarthe,

Marne, &c., and even among the cattle accumulated within the walls of Paris. M. Bouley regards the disastrous war (now happily at an end) as the cause of the cattle disease; and adds that, fortunately, the use of the meat of the animals attacked is not prejudicial to man.

SEWAGE DURING THE SIEGE OF PARIS.

IT is well known that Paris has no main sewers, the sewage being conveyed by forcing pumps and hoses into large tubs, which are emptied at some distance from the capital. The besieging armies blockaded so closely that various changes by cuts and canals had to be made; but, horses becoming scarce, the tubs could no longer be taken to a distance from the city, and the usual amount of sewage removed fell by one half, the other of course remaining in the houses. It may be conceived how this acted upon the sanitary condition of Paris.

Another source of air-pollution was the difficulty of conveying away the ashes and house refuse, which the inhabitants of the capital have the bad habit of throwing into the street in the evening to be carted away in the morning. This practice was stopped during the siege, and carts, as in London, went round for the dust. It may be here mentioned that, in ordinary times, no less than 9000 rag-pickers wander in the streets during the night, to carry off whatever in the heaps of dust can be utilised.

IN his annual report presented to the Metropolitan Asylums Board, Dr. Brewer, M.P., stated that the imbecile patients transferred from the metropolitan workhouses to Leavesden and Caterham Asylums exhibited already a marked improvement mentally and bodily, owing in part to the salubrity of the sites, and the use of a more comprehensive scheme of moral and physical treatment.

AT the London Hospital the friends of the patients are again admitted to the wards, with the sanction of the medical staff. All patients now in the hospital have been vaccinated, and for the present the operation will be performed on all subsequently admitted.

THE Lambeth Guardians have appointed a committee to investigate the state of the children in the Norwood Schools.

THE ROYAL COLLEGE OF PHYSICIANS.

DR. GEE'S GULSTONIAN LECTURES.

LECTURE II.

IN his second lecture, delivered on Wednesday, the 8th inst., Dr. Gee discussed the conditions regulating the temperature of the body—the balance struck between the heat produced and the heat lost.

The variations in the temperature in health are slight, never probably exceeding 3½° F.; and, under the same circumstances, the mean daily temperature does not vary more than the quarter of a degree. But how is it that the result is so uniform when the factors in that result are so variable? It is the very variability in the factors which secures the uniform result. There is a voluntary balancing, by changes of food, clothing, &c., which has reference chiefly to considerable periods of time, as the seasons; and there is an involuntary control which regulates the heat of the body, not from day to day, but from minute to minute. When the body is heated by muscular exercise the respiration becomes quicker, circulation more rapid, and the skin full of blood and sweating. When the body is cool the skin is pale and bloodless, protecting the inner parts from loss of heat. Thus any great change is provided against. Probably this is exerted only within narrow limits. Hence so soon as the temperature of the air approaches that of blood, sunstroke becomes common amongst those who neglect voluntary means. Excess in potential heat in food or air is limited. We cannot digest much more than we want; and muscular exercise is limited by fatigue; but the addition or abstraction of external heat is illimitable.

How does the body behave under external heat or cold? The body can only bear a temperature higher than itself in an atmospheric medium. Its own temperature soon becomes raised. Rabbits and dogs tied to a board and exposed to a hot sun soon reached a temperature of 114·8° and then died, with frequent pulse and respiration, the dyspnœa ceasing before death, which was preceded by very rapid action of the heart and muscular cramps. The temperature continued to rise after death till it reached 122°, and the muscles afterwards were found stiff, as if cooked. The temperature of a healthy human being raised to 107½° by a vapour bath, caused great sense of heat, discomfort, faintness, unsteadiness of muscular movements, frequent pulse, and finally indications of affection of the sensorium in a strong disposition to swoon. A comparison of these symptoms with those of sunstroke left no doubt in the lecturer's mind that the latter is the result of raising the body-heat up to a certain point. Blood begins to clot in the vessels at 109°. The muscles of warm-blooded animals set at 118°, and more gradually at lower temperatures. The rational treatment of heat-stroke is strongly supported by experience. The aim should be to reduce as quickly as possible the heat which is killing the patient.

When heat is abstracted from the body, its temperature can be only maintained by involuntary means, when the temperature to which it is exposed is not below 80°. When it is below that point the temperature first rises, and then gradually falls. The primary rise was noted in 1788, and has been carefully studied during the last ten years, especially by Liebermeister, who thought it indicated an increased generation of heat in the body for the purpose of counteracting the increased loss. Others deny the possibility of this, and say that the rise is due to the circumstance that the contraction of the cutaneous vessels interposes between the mass of the blood and the cold medium a layer of ill-conducting tissue, so that the body loses not more but less heat than natural. Recent experiments have shown that during the rise the amount of carbonic acid expired is greatly increased, and this must correspond to increased chemical combination, so that there can be little doubt that the body does possess the power of spontaneously adjusting within limits its supply of heat to the demand. But the loss or gain of heat in a cold or hot bath is greatly influenced by the state of the cutaneous vessels, contracted in the former, dilated in the latter. An animal shaven and varnished, and then exposed to the ordinary temperature of the air, rapidly dies, and shows such rapid loss of heat that there can be no doubt that the death is due to the depression of temperature; the rapid loss under these circumstances is due to the hyperæmic state of the skin. Such rabbits have been kept alive for five days by surrounding them with an atmosphere of 95°.

The lecturer next passed to the subject of pyrexia. After glancing at the now untenable theory that there is no actual increase in the body-heat in pyrexia, but merely on equalisation of the temperatures of external and internal parts, he observed that the elevation of the temperature of the blood, which undoubtedly exists, must be due to increased production of heat, diminished loss, or to a combination of the two causes. That the production of heat is increased has been proved by careful calorimetry, and the results found to agree very nearly with an estimate of Helmholtz. The loss of heat in relapsing fever has been found to be actually double that of health, and yet did not suffice to carry off all the excess of heat generated. According to the chemical theory, this fact involves increased combustion, and consequent increased excretion of the products of combustion. Accordingly, Leyden and Liebermeister have both found that the amount of carbonic acid expired is increased in the ratio of 1½ to 1. Taking the amount of carbonic acid expired as a fair index of the amount of tissue metamorphosis, it was found that in the cold stage of fevers the production of heat is greatly increased, while the loss remains stationary at the standard. In the hot stage the production is increased, though to a less degree than in the cold stage, whilst the loss is increased also; and in the sweating stage the production falls

to the standard of health, whilst the loss is greatly augmented. Urea and uric acid are both increased in pyrexia in about the same proportion as the carbonic acid. The products of combustion are thus, in pyrexia, greatly increased in quantity. The corresponding consumption of combustibles is evidenced by the rapid loss of weight in the pyrectic state.

Pyrexia, secondary to a local inflammation, was long thought to be due to heat generated at the spot, and carried thence into the general circulation; but careful observations have shown that the local increase of temperature is never equal to the general heat of internal parts, as measured by the vagina or rectum; the difference is less the further the internal parts are from the surface. How, then, is the pyrogenic influence carried from the local inflammation, by nerves which are supposed to regulate the heat-producing centres, or by vessels which absorb some matter that sets up fever? After the removal of parts of the nerves of a dog's leg, fever could be produced by a local inflammation as readily as if the nerves were not removed. Hence, by exclusion, we are almost forced to accept the doctrine, for other reasons highly probable, that traumatic pyrexia depends on pyrogenic matters absorbed by the vessels from the local inflammation.

ARMY HOSPITALS IN THE AMERICAN SERVICE.

WE briefly adverted some weeks ago to an important order, relative to the construction of army hospitals, issued from the Surgeon-General's Office of the United States Army, the substance of which appeared recently in the *Medical Times* of Philadelphia. The late continental struggle having lent an impetus to this nation to augment and reconstruct its military services, an official circular emanating from the above source on such a subject is interesting. During their late war the American nation displayed unparalleled energy in the construction of new hospitals, and they may fairly boast of an amount of success in military surgery, hospital hygiene, and hospital administration achieved by no other nation. Their hospitals, moreover, were not only very numerous, but of immense size. They were all, at any rate, after a certain date, constructed on the pavilion system, and the medical department was able to declare, regarding them, that no diseases referable to defective hospital hygiene were engendered within their walls. One great advantage which these hospitals possessed was due to the healthy and open nature of the sites selected. The present circular relates to hospitals of a small size and different character, which do not in any essential principle seem to differ from those adopted by our War Office authorities for regimental infantry and cavalry hospitals. The information cannot fail to be useful, however, to many persons in this country.

The plans and specifications for post hospitals approved in general orders by the War Department, Washington, will form the basis of action until further orders in regard to this subject.

The following is the plan for a regulation post hospital of twenty-four beds:—The hospital consists of a central administration building, and two wards arranged as wings. The wing for each ward will be 45 feet long, 24 feet wide, and 15 feet high in the clear from floor to ceiling. For very cold climates, the height may be reduced to 12 feet, in which case the length will be increased to 50 feet. Attached to each ward, at the outer end and behind, will be a room for the earth-closet, 9 feet square. The administration building will be 35 feet front by 39 feet deep, and two stories high, with a back building 40 by 14 feet. Each story of this building will be 12 feet high from floor to ceiling. A verandah, 10 feet wide, will surround the hospital, with the exception of the kitchen.

In hot climates the wards will be detached from the main building, only remaining connected with it by the verandah, which will thus entirely surround the ward. The back-building will be separated in like manner. The approved plan for a regulation post hospital of 12 beds, designed especially for malarious regions and southern climates, where it is desirable that the ward shall be on the second story, will consist of a building two stories high, with a verandah extending entirely around the building 10 feet wide.

It is supposed that regulation hospitals will usually be built of wood; but brick or stone may be used when deemed more economical. In all cases the ground floor must be raised 18 inches from the ground, with arrangements for free ventilation underneath it in warm weather. In warm climates and malarious regions the ground floor will be raised at least 3 feet above the ground, on piers or open arches. When built of wood, these hospitals should be balloon frames, covered first with rough boarding, then with tarred paper, and clap-boarded over the whole. The walls and ceilings of all rooms are to be lathed and plastered. The floors are to be of the best quality of clear plank, 3 inches wide, of hard pine or other hard wood, tongued and grooved, and neatly fitted. In northern climates, when the ground will permit of it, a good cellar will be constructed under the kitchen. The windows of the wards will be 10 feet by 3 feet, and reach within 1 foot of the ceiling. Both sashes will be made to slide with weights and pulleys. To the top of the upper sash, for its whole width, will be attached a light louvre board, 1 foot wide, to throw the entering air towards the ceiling. At posts where the mean temperature for the winter is liable to fall below 28° F., the ceiling of the ward being 12 feet from the floor, the windows will be double, and 8 feet high by 3 feet wide. The windows of the administration building will be 7 feet by 3 feet, and be fitted with outside shutters. The dimensions given each room in the plans must be attained in the clear. The arrangements of ventilation of the wards will vary according to climate. On the Gulf coast and in Arizona, the wards will not be ceiled, and will have ridge ventilation for their whole length. At all posts where continuous artificial heat is required for three months in the year, the walls will be ceiled, and have boxed openings carried from the centre of the ceiling to the ridge for summer ventilation. There will be two of these openings, each 10 feet long by 2½ feet wide, and 10 feet apart. In winter the heating will be effected by a ventilating double fire-place, with means for creating a continuous upward current for removal of the vitiated air. The Surgeon-General will indicate such modifications of this plan of ventilation as may seem desirable on account of locality, &c., when the plans for each hospital are submitted to him. A ventilating shaft, six inches square, will be placed in each earth-closet room, and the lamp or gas-burner of this room should be directly beneath this shaft. The chimney of the kitchen will be built with two flues, one of which will open near the ceiling, and be used exclusively for ventilation. In hospitals built of brick, the walls will be double, a space of 3 inches being left between the inner and outer walls, the two walls being securely tied together with bricks so arranged as to admit of a free circulation of air between them. Other sizes of hospitals may be constructed, when approved by the War Department, by suitable lengthening of one or both wards.

THE SMALL-POX EPIDEMIC.

THE epidemic of small-pox is rapidly declining. There were only 185 deaths in the metropolis, as compared with 194 the week before. There was a decline in the mortality in all the groups of districts except the East, where there was a considerable increase. The decline was largest in the North.

It is impossible to doubt that the decline is chiefly due to the extraordinary measures taken to secure universal vaccination. In nearly every district extra inspectors have been employed to visit infected houses and courts for the purpose of enforcing the desirability of vaccination and revaccination. The rush for lymph, which has been great and continuous during the epidemic, is now somewhat subsiding, showing that the great masses of the people have been made safe. Nevertheless, wherever house-to-house visitation is carried on, there are still to be found a few unvac-

cinated children, and a good many insufficiently protected adults, and it is to be hoped that the machinery will not be dispensed with until the danger is completely over. The lesson of the epidemic will not, we trust, be lost on the Committee of the House of Commons now sitting. It will not be sufficient to prove that vaccination has lost none of its efficacy, or that a thorough investigation will disarm the operation of the dangers which are supposed to be attached to it. But it will be indispensable to examine the operation of the law—to ask why it has so completely failed, and what measures may be taken to improve it.

Correspondence.

"Audi alteram partem."

NITRATE OF SILVER IN PAINFUL SWELLING OF THE JOINTS IN RHEUMATIC GOUT.

To the Editor of THE LANCET.

SIR,—I was called to see a moderately robust male patient lately, about twenty-six years of age. He was suffering intense agony from rheumatic gout, affecting chiefly the knees and ankles; the right ankle especially was swollen and glistening. He could not bear the least touch without screaming, and had been unable to rest in any position. The necessity for relief seemed to be so urgent that, in the hope of attaining this end, I applied nitrate of silver freely over the whole of the inflamed surfaces until every portion was well covered with it. I used an ordinary stick of caustic, dipping it from time to time in water. In less than two hours the pain was sensibly lessened; the amelioration continued, so that in twelve hours the pain had so far subsided as to allow the free handling of the joints, and he could bear to have his limbs moved. The pain never reappeared when the nitrate had taken full effect. In a few places, where pain lingered, a fresh application was made. There was a partial blistering of the surface, but as in the course of the illness the blackened cuticle separated, the skin was natural and healthy underneath. The illness was a tedious one; and if relief had not been obtained as it was, it might have been more serious.

I have not met with a mention of the use of nitrate of silver in such cases, but I am convinced that few things answer better under the circumstances.

I am, Sir, your obedient servant,

Marlborough, Feb. 22nd, 1871. WALTER FERGUS, M.D.

CASE OF CHRONIC HYGROMA OF BURSA PATELLÆ.

To the Editor of THE LANCET.

SIR,—In THE LANCET of January 14th, Mr. West, F.R.C.S., of Birmingham, published a case of this disease, and as it appears to be rare, and having recently had a very nearly similar case, I beg to forward a description of it.

On the 2nd of October, 1870, Mrs. W——, aged forty-two, was in the sixth month of pregnancy, extremely fat, with varicose veins of both legs, but good general health. She stated that seven or eight years ago she first noticed that a hard lump was coming in the knee, and which had steadily grown until now it measures vertically 5 inches; circumference at base, 10 inches; transverse, 5½ inches. The tumour was globular, and apparently solid, giving the idea that in the centre was the patella, but this could be felt below it; the skin was adherent and ulcerated at two points; there was no pain except when she knelt on it. I decided to operate for removal. Chloroform was given by Dr. Saunders, and Dr. Octavius Yates assisted me. An elliptical incision was made in its long diameter, and the tumour dissected out. It was found very adherent to the tendon of the patella, from which I separated it, chiefly by scratching firmly with the handle of the knife. Two ligatures were required, and numerous small vessels were treated by torsion. After removal, the tendon of the patella could be seen as having formed a perfectly level floor on which the tumour had lain. The wound was brought together by means of four straight needles, with twisted sutures round them, and four simple sutures. The wound was then dressed with carbolic oil, lead-foil on the top, a straight splint under the joint, and the whole leg bandaged over all.

Oct. 10th.—Removed two needles and two sutures.

12th.—Removed the other two needles and other sutures.

13th.—The two ligatures came away; wound nearly healed.

18th.—Wound healed with exception of a small point at upper part. Allowed to get up; splint kept on.

25th.—Quite well; splint removed; knee bandaged. Walks about without pain; slight stiffness only. Discharged.

The wound was dressed daily (except the first four days) with the carbolic oil; altogether there was not more than one drachm of pus.

Examination of tumour.—It was found extremely dense to cut; was of a yellowish-white colour, studded with minute red points; it was solid throughout, with the exception that in the centre were several cells about the size of a horse-bean, containing a yellow gelatinous mass.

The woman was confined the end of January. The skin of the knee is movable on the patella, and the line of incision is 5½ inches long.

I am, Sir, your obedient servant,

G. E. GASCOIGNE, M.D. Montreal,

Quebec, Canada. Assistant-surgeon, R.A.

PIROGOFF'S OPERATION.

To the Editor of THE LANCET.

SIR,—In your journal of to-day I see Mr. Hill showed a patient on whom he had performed Pirogoff's amputation of the foot, at the meeting of the Medical Society of London, held February 20th, and that Mr. Henry Smith said he always now preferred it to that of Syme. I read this account with a great deal of pleasure, as I thought until the last few weeks I was almost alone in my preference for Pirogoff's. It was only last month I read a paper on amputation of the foot before the Central Somerset Medical Society, in which I gave my unqualified approval to Pirogoff's operation over that of Syme, and I have always during the last four years since, I performed my first Pirogoff, persistently advocated the operation amongst my medical *confrères* in this neighbourhood. The chief objection to Pirogoff's, I believe, is that the skin at the back of the heel is too tender to bear the weight of the body. In practice, however, I have not found it so; on the contrary, I have found that the skin after a time becomes thick, and gradually assimilates itself to the natural skin of the under surface of the os calcis. The arguments I have always used in favour of Pirogoff's are—1st, there is very little shortening; and, 2nd, that the uninjured end of the back of the os calcis is better for the body to rest upon and bear its weight than the cut and, necessarily, mutilated ends of the tibia and fibula, such as you meet with in cases of Syme's operation. I am most sanguine of the ultimate triumph of Pirogoff's operation; and, anxious as I always am to carry out in their integrity the rules of a conservative surgery, I, nevertheless, question very much whether Pirogoff's method will not give better results than even Chopart's. So far as my own cases are concerned, I decidedly give the palm for power of locomotion to the former. I will not now trouble you with the cases, but I hope to do so shortly. I must apologise for troubling you thus far, but I plead as my excuse my great anxiety to see the subject thoroughly discussed, as it is, in my estimation, of the utmost importance, as we are called upon to perform these operations upon persons who depend much upon their capabilities of locomotion for earning their daily bread.

I am, Sir, your obedient servant,

SAMUEL CRADDOCK,

Shepton Mallet, March 18th, 1871. Coroner for North Somerset.

PROMOTION IN THE MEDICAL DEPARTMENT OF THE ARMY.

To the Editor of THE LANCET.

SIR,—In your issue of the 4th inst., under the head of "Army Medical Service," is the following:—"If inspectors-general of hospitals had to retire after a certain number of years' service in that rank, they would be placed in a parallel position to that of general officers commanding districts, who only hold their commands for definite periods; the regulation would be no harder in the one case than in the other, and it is certainly every bit as requisite."

Will you allow me to show that through the above sentence there runs a vein of inaccuracy from the beginning to the end; as the cases are in no way parallel; and, further, that if such a regulation as that proposed were applied to inspectors-general of hospitals it would be hard on these officers, and harder still on the tax-paying public.

The cases are not parallel in any way; inasmuch as the general officer who completes his tour of staff service *is not shelved;* he remains on the active list, eligible for, and constantly receiving, further employment; while he is at the same time working up to, if he has not already reached, his emoluments as colonel of a regiment.

Secondly: There is a fixed establishment of general officers, and a fixed number (as a rule) of appointments for such officers; a change, therefore, in the occupancy of the appointments causes no extra charge on either the effective or non-effective estimates; whereas if Government were to shelve every inspector-general of hospitals after a certain period of service in the rank, simply to give more rapid promotion to officers under him, it would very soon be discovered that a very considerable and most unnecessary burden was imposed on the public funds, as each inspector-general shelved while he was just as fit for duty as the man promoted to succeed him would represent an additional annual charge of close on £700 a year, amounting in a very short time to thousands of pounds annually.

No Minister for War, unless he could show that the efficiency of the service demanded such outlay, would feel justified in proposing to burden the country with so large and useless an additional expenditure.

The subject of the retirement of medical officers *of all grades* was most fully gone into by Lord Herbert's committee in 1857, and that body were unanimously of opinion that all the requirements of the service, and of the medical department, would be met by the compulsory retirement of all administrative medical officers at the age of sixty-five, and of all executive ones at fifty-five—or before these ages if any individual officer of either class was found by a medical board to be physically unfit for the efficient performance of his duties.

Let me observe, further, that to compare the slowness of promotion of an assistant-surgeon to the rank of surgeon with that of a lieutenant of artillery or engineers to the rank of second captain, is not putting the matter in a fair or full light.

Every assistant-surgeon of six years' service virtually gets promotion *in all but the name*, for after five years' service he gets an addition to his daily pay of 2*s.* 6*d.*, making his pay 12*s.* 6*d.* a day, with, after six years' service, the relative rank and allowance of a captain; while on completing ten years' service his pay is increased to 15*s.*; so that on completing ten years' service he has the same pay, allowances, and relative rank which, but a few years ago, were held by *a regimental surgeon of twenty years' standing.*

If, therefore, the rank of surgeon is not attained under even fifteen years' service, there is no just cause for complaint; as a pound a day with the relative rank and allowances of a major is a very fine position after fifteen years' service.

It is the retention of the useless and unmeaning title of *assistant*-surgeon which is at the bottom of the supposed grievance in the matter of promotion. If that title were abolished no reasonable man could complain of either the pay or the relative rank which are now attainable in the medical department of the army after very moderate periods of service. When the present periods of promotion are compared with those which ruled some years ago, it should not be forgotten that promotion then, and promotion now, meant and means two very different things; and that a dozen years ago a surgeon of twenty years' service was not a bit better off, either in the matter of pay, allowances, or relative rank, than the assistant-surgeon of ten years' service is to-day.

I do not say that too much has been done for the medical officers of the army, but I do say that a great deal has been done, and that there is now very little indeed, either in the matter of pay, allowances, relative rank, or promotion, which can be complained of in any grade, unless it be that every man who enters the service cannot leave it as an inspector-general, any more than every man who enters the army can hope to be a field-marshal.

Faithfully yours,

March, 1871. M.D.

MODE OF EXAMINING.

To the Editor of THE LANCET.

SIR,—The subject of examinations for qualifying students to practise medicine, surgery, &c., and the manner in which those examinations are conducted, have been a matter of consideration for many years; and, doubtless, many opinions are rife respecting the most efficient and satisfactory mode for adoption. It would seem that the present systems adopted by the various licensing bodies have arrived at the acme of perfection, inasmuch as of late we have heard of very few complaints made public attacking their *modus operandi*. Have we or have we not an effective system of examination for testing thoroughly and surely the qualifications and abilities of candidates presenting themselves at the various boards? is a question upon which very many would like to feel satisfied.

For my own part I consider there is vast room for improvement. To enter into details of each respective Board would occupy too much space in your instructive paper, and also the valuable time of your readers; but, as a case in point I will take the recognised plan at the Society of Apothecaries. The examiners' aim is, to all intents and purposes, to stride over as much ground as they possibly can in the smallest amount of time, which naturally must be accomplished at the expense of sound penetrating investigation. The candidate's paper, upon which his name and medical school are made known, after being written in hot haste to comply with the limited time allotted for its completion, is hurriedly and superficially skimmed over, the writer of which is then conducted into "the room of horrors," wherein sit the president and staff of examiners, to the former of whom he is introduced, and from thence to his examiner, at whose absolute discretion he may obtain honour or disgrace. It must be obvious to all that to place a man's success in life in such a capricious balance as the above is to draw justice to as limited a point as it possibly can be drawn in fairness to the candidate. I say so without casting the slightest imputation on the examiners; for I firmly believe that they are actuated by the fullest sense of impartiality and disinterestedness.

I think that the above mode of examination might be modified in such a manner as to be proof against all insinuations cast at it, enhancing satisfaction and content to both examiners and candidates. To further this view, I would humbly suggest—

1. That no candidate's name or school be made known on his papers, recognition being effected by numbers.

2. That more time be allowed for answering papers, special stress being laid upon neatness, composition, &c.

3. That the board of examiners be divided into three sections, each section acting independently of one another: (*a*) to issue questions for papers; (*b*) to examine the answers given by candidates to such questions; and (*c*) to examine *viva voce* on all required subjects comprehensively, and append marks according to the merit of each individual.

4. That the number of marks obtained by each candidate from either section be handed over to the secretary, who will immediately publish the name of candidate corresponding to number, with the aggregate marks obtained by him.

If by your aid, Sir, some such arrangement be adopted in lieu of some of the existing ones, medical students for the future would be ever thankful.

I am, Sir, your obedient servant,

London Hospital. W. E. F.

*** Our correspondent's complaint is well founded, and his suggestions are worthy of consideration.—ED. L.

THE CORONERS BILL AND WORKHOUSE MEDICAL OFFICERS.

To the Editor of THE LANCET.

SIR,—I have been informed that an amendment has been, or is about to be, placed on the notice paper of the House, "That workhouse medical officers shall in future receive no fee for any post-mortem, nor for any evidence given in a coroner's inquisition, where the death of the person has taken place in a workhouse." How far this proceeding has originated as a consequence of the frequency with which inquests have been held in a particular metropolitan workhouse it is not my intention here to determine; what I desire to do is, to draw the attention of the Poor-law service to the injustice which will be perpetrated on hundreds of unoffending union surgeons, who, if the amendment passes, will be mulcted of all consideration for their loss of time &c. in attending inquests. In country districts, where the Union house is ofttimes a distance from the surgeon's residence, it will be most sorely felt.

I would therefore urge upon the members of the Poor-law service the necessity of at once communicating with such M.P.s as they may know, and pointing out to them the hardship of this proceeding.

What a commotion there would be if such a blow to the interests of lawyers were attempted: there would be a stir through all ranks, from the Lord Chancellor down to the boy who carries the brief-bag.

I am, Sir, yours obediently,

Dean-street, Soho, March 22nd, 1871. JOSEPH ROGERS.

NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

THE NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

THIS Society held its last meeting for the session on the 2nd ult., under the presidency of Dr. Burnup. The attendance was very good and the business ample and interesting. Mr. Luke Armstrong exhibited a foreign body—portion of a gutta-percha bougie—removed from the bladder, a leg amputated for malignant disease, and an interesting example of skin-grafting in a patient the subject of chronic ulcer. Dr. B. Bramwell showed a large fatty tumour removed post mortem. Mr. A. Bell a hypertrophic elongation of cervix uteri, removed by amputation. The following papers were read: Dr. Charlton, "The Modern Doctrine and Treatment of Phthisis"; Dr. Hayes Jackson, "On the Treatment of Small-pox"; Mr. A. Bell, "Remarks on a case of Ulceration surrounding the Meatus Urinarius of ten years' duration, cured by operation"; Mr. J. Manson, "A case of Compound Dislocation of the Knee-joint." From the discussions on the prevalent diseases of the district at this and the previous meeting, as well as from other sources, I send you some particulars of the present epidemic of

SMALL-POX IN NORTHUMBERLAND AND DURHAM.

From the remarks of Dr. Williamson, and Mr. Leonard Armstrong, practitioners at South Shields, the disease scarcely shows signs of abating. A large number of persons advanced in years had been attacked very severely, which these gentlemen thought was a point of distinction between the present and former epidemics. Vaccination and revaccination was being extensively carried out, although sometimes under very unfair conditions for a full trial of its preventive power. Yet their confidence was unshaken as to its power to prevent and modify small-pox. Mr. G. A. Hutton (Rifle Brigade) stated that in his regiment, which was upwards of 900 strong, he had never seen a single case; and during the whole period of his service, which extended over more than seventeen years, and during which time he had been quartered in most of the principal towns and camps of the United Kingdom, he had not seen more than six cases. This he attributed entirely to the stringent rule in the army that all recruits should be revaccinated, and he thought it one of the strongest proofs of its protective influence. Dr. Burnup did not believe revaccination was necessary if vaccination had been successfully performed in infancy. In Newcastle the disease is manifestly spreading, but some of the worst cases have occurred at the manufacturing village of Scotswood, about two miles from town. At Gateshead the disease diminished in frequency until the 12th ult., since which date about twenty-two fresh cases have been reported. At Castle Eden and many of the colliery districts of Durham, the disease has appeared with more or less severity. Dr. Mordey Douglas thought that the Sunderland cases, some of which were from the crews of the ships sunk in the Seine, had not been contracted in France, but in the East of London, where they stayed some days as they returned. As to the propriety of using lymph from revaccinated cases, the feeling of the meeting was strongly opposed to the practice.

Newcastle-on-Tyne, March 21st, 1871.

IRELAND.

(FROM OUR SPECIAL CORRESPONDENT.)

DEATH REGISTRATION.

AT a meeting of the Medical Society of the College of Physicians on the 15th inst., a very interesting paper on the above subject was communicated by Sir Dominic Corrigan, M.P. He considered that the cases were very few indeed where a conscientious practitioner could put his name to death certificates. He thought that some new certificate should be brought in by the Government, and promised to do all in his power to modify the present state of things, when an opportunity arose in the House of Commons. He showed that it had failed in England, where it was not compulsory; in Scotland, where a penalty of forty shillings was the result of non-compliance; and in Ireland, where an infraction of the Act of Parliament constituted a misdemeanour, although the law could not be enforced, as no one could in justice be punished for refusing to certify to a falsehood. There is no doubt that some modification of death certificates is urgently required, as at present great irregularities are constantly taking place, and statistics of death registration are notoriously unsatisfactory, and not to be depended on for any scientific deductions.

OVARIOTOMY.

At a meeting of the Pathological Society of Dublin, on the 18th inst., an ovarian tumour was exhibited by Mr. Quinlan, of Vincent's Hospital, which he had removed a few days previously. The details of the case are as follows:—The patient, a woman about thirty, had been tapped three times at different periods; but as the patient's health was rapidly breaking down, and but a very short time had elapsed after the last tapping before the cyst filled again, it was resolved to operate, with the consent of the patient, although extensive adhesions had been diagnosed during life, and very little chance of a successful result was promised. An incision was made from the umbilicus to the pubes, and a Wells's trocar introduced, by which 41 pints of fluid were obtained from a unilocular cyst. Adhesions were found close to the umbilicus and to the intestines; the tumour was also attached to the great omentum. One artery required tying in the latter, the bleeding being very profuse. The pedicle was secured by a clamp, and harelip pins were used to draw the parts together. Pressure on the abdomen caused no pain. She died from acute peritonitis fifty-four hours after the operation had been performed. It may be mentioned that she measured before being operated on 57 inches round the abdomen, and that the fluid removed was, as usual, highly albuminous, and of a specific gravity of 1023; there was, however, no albumen in the urine.

SMALL-POX IN IRELAND.

In Wexford during the last week four new cases of small-pox were admitted into hospital, and one death has taken place, making the fourth fatal case since the disease was brought to that town from Greenock in January last.

At Queenstown, the *Resolute*, an American ship, arrived in Queenstown Harbour on Sunday last from Liverpool, with one case of the disease on board; whilst of the four sailors landed lately from the ship *Peruvian Congress*, and placed in the Queenstown Hospital, one has died, and the remaining three have recovered, and have returned to Liverpool.

In Dublin, a woman aged twenty-seven died lately in the Cork-street Fever Hospital from small-pox; but altogether the epidemic has been very slight, and but few deaths have occurred.

THE CLINICAL EXAMINATION AT THE COLLEGE OF PHYSICIANS.

At a late meeting of the guardians of the North Dublin Union, a letter was read from the Poor-law Commissioners stating that they had received a resolution of the guardians declining to accede to the proposition conveyed in a letter from the Registrar of the College of Physicians, that candidates for the licence of the College be allowed to be examined at the bedside of patients in the workhouse hospital, and that they (the Commissioners) desired to express their concurrence in the view taken by the Board on that subject. What objection the guardians or the Commissioners could have in acceding to the request of the College of Physicians it is impossible to say, especially as the South Dublin Union, and I believe all the hospitals in the city, have allowed candidates for the College to be examined clinically in their wards.

THE SEWAGE OF DUBLIN.

At a meeting of the Corporation of Dublin, on the 16th inst., it was resolved that a concession for twenty-five years of the sewage of the city be granted to Messrs. Barrington and Geffers, on behalf of a company which they propose to form for the utilisation of the sewage; the corporation receiving for such concession one-sixth of the net profits, and the company undertaking that the sewage shall not be used on the North Bull, nor on the Clontarf strand. Of course this arrangement only holds good should the Main Drainage Bill, now before the House of Commons, be passed.

ATTEMPT TO ASSASSINATE A MEDICAL GENTLEMAN.

I regret to state that Dr. Caldwell, of Maherafelt, Londonderry, was twice fired at recently, whilst returning home from visiting a patient, about 11 o'clock at night. The second shot penetrated his hat, showing how narrow was his escape. No arrests have been made, and up to the present no reason can be assigned for this atrocious outrage.

Dublin, March 21st, 1871.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

A GREAT ovation was last evening given by the students of the University of Vienna to Professor Skoda, who retires from his chair of Clinical Medicine at the end of this winter session, and is succeeded by Dr. Duchek. This ovation took the form of a vast torchlight procession of about 1700 persons, from the square of the Old Arm-manufactory, not far from the General Hospital, through the streets of the Alser suburb, by a rather circuitous route of nearly a mile to the professor's house. The marshaling of the students began at 7 P.M., at which hour the streets and open ground in front of the rendezvous were thronged with spectators of all classes, who appeared to take a lively interest in the proceedings, and who waited most patiently till 8 P.M., when the arrangements were completed, and the procession set out. At a trumpet-signal all torches and lamps were lighted, and the column slowly emerged from the gateway of the court, preceded by a band of music, and by two beadles on horseback. After the band came the members of the "Skoda-feier" Committee, then the Academical Singing Club, with pink and white lanterns, and then the German clubs, carrying torches. Another band of music succeeded, after which came the clubs of students from the non-German-speaking nationalities—Hungarian, Sclavonian, &c., carrying banners and torches. The different clubs were distinguished partly by coloured sashes, and partly by their caps, which in most cases were only plain white or green, but in others bordered on the fantastic, as did the whole attire of some students who wore long jack boots and white breeches, and dangled rather stagey rapiers by their sides. It was feared that there might be a "row" between the Germans and the Sclavonians, to which branch of the Austrian nation Dr. Skoda belongs, and strong bodies of the police and also of the military were kept in readiness against such an event; but happily all passed off quietly. The grievance was that the Germans were to take precedence of the others in the procession; and to carry their tricoloured flag in opposition to that of the "Ischecks" or Sclavonians. The latter difficulty was got over by the Austro-Germans leaving their colours at home, after which the "Ischecks" consented to yield them the first place.

The streets through which the procession marched were literally thronged with spectators; and all windows and places from which a good view could be obtained were similarly crowded. The long line of torches had a striking effect from a little distance, especially in the open ground of the Parade Platz, through which it first passed. The near view was marred by the smoke and smell of the resinous materials of which the torches were made. Arrived at Professor Skoda's house, in the Reiter Gasse, a deputation of the committee entered, and presented the hero of the day with an address signed by upwards of 2500 students, past and present, handsomely engrossed, and splendidly bound.

The address began by expressing the regret with which the students of Vienna had heard of Dr. Skoda's intention to retire. It then went on to say: "In a time when the science of Medicine was still founded on a raw empiricism, and when in the diagnosis of diseases more or less fallacious conclusions were still being drawn from obscure physical signs, you stood forth as a reformer; and the victorious light of your logic and untiring investigation destroyed the mists of artificial hypotheses, and gave to medical science an irrefutable physiological basis." Further on, after speaking of the kind treatment and friendly help which individual students had received from Professor Skoda, the address continued: "The whole world praises what you have done for science; what you have done for students is—since you did it without show, and without ostentatious speeches—unknown to the public." It concluded by saying that posterity, as well as those of the present age, will honour his name "as a bright example of great and noble humanity, and of intrepid firmness of character."

Professor Skoda, who was surrounded by his colleagues, amongst whom the names of Rokitansky, Hebra, Braun, Hyrtl, and Brücke, will be familiar to most English readers, replied very briefly, and with evident emotion, to this address; and then, in answer to numerous "hochs" from the students assembled before his house, he went on to the balcony, and said a few words to those below. Redoubled "hochs" greeted his appearance, and for a minute or two the street echoed with the shouts. Then the Musikverein sang a short stanza composed for the occasion, and the procession returned to the parade ground, where it "dismissed." It is calculated that there were between thirty and forty thousand people in the streets, and a more orderly crowd was never seen. With the exception of one girl who was slightly burnt by one of the torches, not the slightest accident occurred.

Dr. Skoda will be best known in England by his work, "Ueber Percussion und Auscultation," which he published in 1839, and which has reached a sixth German edition. In Vienna his fame rests on his merits as a clinical teacher of rare excellence, who has aided the progress of medicine by the increased precision he has given to methods of diagnosis, and who has helped perhaps more than any other man to give the Vienna School that reputation as a school of clinical medicine which it has had of late years in Europe. Prof. Skoda has had the courage to do what many have shrunk from doing—namely, to retire from office with unimpaired faculties, and before the onset of those evidences of waning powers which are so painful to see in men of

once powerful intellect. His recent lectures have been as clear and vigorous as those of a man of forty, and his general appearance shows very little sign of age, but rather causes a feeling of regret that he should not longer continue to teach. He is about sixty-five years of age now, and it is said has of late years suffered from gout, of which, however, he shows no trace in his walk.

It may interest some readers to know that a selection of his clinical lectures, edited by Dr. Schrötter, at present the most distinguished teacher of laryngoscopy in the Vienna School, and who was six years assistant in Skoda's wards, is preparing for speedy publication.

Vienna, March 15th, 1871.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

THE organisation of the American Association for the Cure of Inebriates is an important step in our progress in the study and treatment of dipsomania. The first meeting was held in November, in New York, at which there were delegates from six inebriate asylums, and a permanent organisation was effected. The Association adopted a "declaration of principles," embodying the following propositions—namely, intemperance is a disease, curable in the same sense as other diseases, its cause being a constitutional susceptibility to the alcoholic impression; this constitutional susceptibility may be inherited or acquired; alcohol is valuable as a remedy, but in excessive quantities is a poison; all former methods having failed to cure inebriates, asylums are required; every city should have its home for inebriates, and every state its asylum for their care; the law should recognise intemperance as a disease, and provide other means for its management than fines and gaols. The papers read embraced the following subjects—namely, Nature of Inebriation; Philosophy of Intemperance; Disabilities of Inebriates; Restraint as a Remedy in Inebriety; Relation of the Church to Inebriates; Inebriate Asylums as they relate to questions of Social and Political Economy; the Moral and Social Treatment of Inebriates; Statistics of Inebriety.

Inebriate asylums have now been established in the following states:—New York, Massachusetts, Pennsylvania, Maryland, Illinois, Texas, and California. In each of these states laws have been enacted, recognising the fact that habitual drunkenness is a disease, rendering the subject incapable of conducting his or her affairs, and requiring restraint and treatment. The New York State Inebriate Asylum is the pioneer institution; having been established in 1857. During the past two years 476 patients have been treated in this asylum, of which number 163 have been cured, 94 have relapsed, and 219 have not been heard from. 63½ per cent. of those heard from have remained cured. In the Pennsylvania Institution the permanent cures are about 40 per cent. In the Washington Home, Boston, 33½ per cent. of the patients are reported permanently cured. The Inebriates' Home, Brooklyn, N.Y., reports one-third as cured, and the Washington Home, Chicago, Illinois, gives upwards of one-half as cured. The marked difference in the percentage of cures in these institutions is attributed to the difficulty of obtaining accurate information of those who have been discharged.

New York, March, 1871.

Medical News.

APOTHECARIES' HALL. — The following gentlemen passed their examination in the Science and Practice of Medicine, and received certificates to practise, on March 16th:—

Hill, Charles Hamor, Teddington.
Robey, Peter John, Newcastle-under-Lyne.
Stamford, William, Swindon, Wilts.

The following gentleman also on the same day passed his first professional examination:—

Chilcot, James, University College.

DR. GEORGE H. KIDD, President of the Dublin Obstetrical Society, has been nominated an honorary member of the London Obstetrical Society.

THE Privy Council has been pleased to award Mr. Brownfield £38 for successful vaccination at the Bromley station.

THE LATE PROFESSOR BERRUTI, OF TURIN.—We find in the Italian medical journals very flattering notices of this physician, who was universally respected, and to whom is due the establishment of a laboratory of experimental physiology in the University of Turin.

NEW ITALIAN MEDICAL JOURNALS.—At the beginning of this year two new medical journals made their appearance. One treats of medical electricity, and is published at Florence by Dr. Manca; the other, called *Annals of Opthalmology*, has been started at Milan by Dr. Quaglino.

THE MAYOR OF STRASBURG.—It is not generally known that M. Küss, the mayor of Strasburg, and member of the National Assembly, who died at Bordeaux whilst attending the meetings of the Assembly, was Professor of Physiology and Dean of the Faculty of Medicine. Grief at the disasters suffered by the French armies, and at the sacking of towns and devastation of provinces, joined to the anxieties and fearful calamities of the siege of Strasburg, are the main causes of the death of this worthy member of our profession.

PRESENTATION.—Mr. Couch, of Bodmin, has received a handsomely bound Bible, Prayer-book, and copy of Wesley's Hymns, together with a silver salver, the present of members of the Wesleyan Societies of the Bodmin Circuit, as "a very small expression" of gratitude to Mr. Couch for receiving a Wesleyan minister, Mr. Hill and his family into his house while labouring under typhoid fever. There were, we believe, four cases in all. The deputation might well characterise Mr. Couch's kindness and that of his family as almost unparalleled.

SMALL-POX IN ITALY.—An epidemic of variola is now raging at Florence and the neighbourhood. It has made a great many victims in a small place called Greve, being imported in the following manner. A man belonging to the latter place went to Florence to see a brother of his lying ill of small-pox in the Military Hospital. He returned home, was seized with the complaint, and spread it through the whole community. The *Imparziale*, which mentions these facts, does not allude to revaccination, nor is it mentioned whether vaccination is freely accepted by the population or not.

BEQUESTS, DONATIONS, &c.—Richard Wallace, Esq., has given £2000 each to University College Hospital, the City of London Hospital for Diseases of the Chest, St. George's, Middlesex, and Westminster Hospitals. A donation of £500 has been presented to St. George's Hospital by Miss Gordon. "J. X. B." has given £100 to the Middlesex Hospital. John Laurie, Esq., bequeathed £2000 to the Royal Infirmary, Edinburgh, and £15,000 to be distributed among charitable institutions in Edinburgh, at the discretion of his executors. James Dale, Esq., bequeathed £300 to the Glasgow Royal Infirmary; £100 to the Glasgow Eye Infirmary; and £100 to the Glasgow Royal Lunatic Asylum. The Norfolk and Norwich Hospital has received £100 under the will of Miss Donne.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this Society, held on Friday, March 10th, Dr. H. Charlton Bastian, F.R.S., read a paper "On the mode of Origin of Bacteria, and on the bearings of this question on the Science of Medicine." After alluding to our imperfect knowledge concerning the mode of origin of many of the lowest kinds of organisms, he discussed the various views which are at present held concerning the nature and origin of Bacteria. Their modes of reproduction and origin were spoken of under the following heads:—1. Homogenesis, (*a*) direct, (*b*) indirect (Hallier). 2. Heterogenesis. 3. Archebiosis. The question of their origin *de novo* (archebiosis) was intimately associated with another problem, as to the cause of fermentation and putrefaction. The evidence on this subject was very decisive. The author then alluded to the bearings of the facts concerning the heterogenetic origin of Bacteria upon many problems in medicine, and briefly indicated how much what he considered the untenable "germ theory" of disease was dependent upon doctrines of fermentation, such as had been advocated by Pasteur.

Medical Appointments.

ARTHUR, J., M.R.C.S.E., has been appointed Medical Officer for the Tamworth No. 3 District of the Solihull Union, Warwickshire.

BECK, J. T., M.R.C.S.E., has been re-elected Medical Officer for District No. 6 of the Chesterton Union, Cambridgeshire.

BREW, T. F., L.R.C.S.I., has been appointed Medical Officer, Public Vaccinator, and Registrar of Births &c., for the Ennistymon Dispensary District of the Ennistymon Union, Co. Clare, vice J. Shannon, M.D., L.R.C.S.I., resigned.

BROWNE, R., M.B., L.R.C.S.I., has been appointed Medical Officer, Public Vaccinator, and Registrar of Births &c., for the Rathmines Dispensary District of the South Dublin Union, vice G. Brassington, L.K.Q.C.P.I., L.R.C.S.I., deceased.

DOBSON, N. C., F.R.C.S.E., has been appointed Surgeon to the Children's Hospital, Bristol, vice T. G. Baretti, M.R.C.S., resigned.

DUKES, C., M.B., has been appointed Medical Officer to Rugby School, vice R. Farquharson, M.D., resigned.

GRIFFITH, W. B., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer for the Muncaster District of the Bootle Union.

GRIFFITHS, D. E., L.R.C.P.Ed., L.F.P. & S. Glas., has been appointed Medical Officer and Public Vaccinator for the Briton Ferry District of the Neath Union, vice T. L. EVANS, L.R.C.P.Ed., M.R.C.S.E., deceased.

HUDSON, T. W., M.R.C.S.E., has been appointed Medical Officer to the Workhouse and the Bootle District of the Bootle Union, Cumberland.

JONES, T., M.D., has been appointed Visiting Apothecary to St. George's Hospital, vice H. S. Illingworth, F.R.C.S.E., resigned.

KNOWLES, E., M.R.C.S.E., has been re-elected Medical Officer and Public Vaccinator for District No. 5 of the Chesterton Union, Cambridgeshire.

LEVER, J., M.R.C.S.E., has been appointed Medical Officer to the Earl of Darnley Lodge, Manchester Unity, Gravesend, vice J. H. Armstrong, M.R.C.S.E., resigned.

LISTER, Prof., F.R.S., has been elected an Honorary Member of the Royal Medical Society, Edinburgh.

MACCORMAC, Dr., F.R.C.S., recently elected Assistant-Surgeon to St. Thomas's Hospital, has been elected Consulting Surgeon to the General Hospital at Belfast, on resigning his appointed as Surgeon to that institution.

MARSHALL, Mr. J., has been appointed, temporarily, Medical Officer for District No. 3 of St. Olave's Union, Southwark, vice R. K. Richmond, M.R.C.S.E., deceased.

MURRAY, W. M., M.D., M.R.C.P.L., has been appointed Consulting Physician to the Newcastle-upon-Tyne Hospital for Diseases of Children, on resigning as Physician.

O'CONNOR, T., F.R.C.S.E., has been appointed Surgeon for the March District of the Great Eastern Railway Provident Society, vice E. S. Wright, M.R.C.S.E., deceased.

RICHARDSON, B. W., M.D., has been elected Hon. Physician to the Royal Literary Fund, vice J. Copland, M.D., deceased.

ROBINSON, R. B., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer to the Dulverton Union Workhouse, vice W. Trevor, M.R.C.S.E., resigned.

ROGERS, W. R., M.R.C.S.E., has been appointed Medical Officer for the Millom District of the Bootle Union.

ROYDS, W. A. S., L.R.C.P., has been appointed Medical Officer to the Reading Dispensary, vice T. L. Walford, M.R.C.S., resigned.

SAYER, T., M.B., C.M., has been reappointed Medical Officer and Public Vaccinator for the Workhouse at Kirkby Stephen in the East Ward Union, Westmoreland.

SMALLMAN, R. S., M.B., L.R.C.S.I., has been appointed Medical Officer and Public Vaccinator for the Wigan District and the Workhouse of the Wigan Union, vice M. F. Reilly, L.R.C.P.Ed., M.R.C.S.E., deceased.

SMITH, J. T., M.R.C.S.E., has been appointed Medical Officer for the Sutton Coldfield District of the Aston Union, Warwickshire, vice J. H. Lakin, M.B., M.R.C.S.E., resigned.

SMITH, J., M.D., has been appointed Surgeon-Dentist to her Majesty in Scotland.

STOCKWELL, F., M.D., has been elected Surgeon to Court Loyal Blenheim No. 5428 Ancient Order of Foresters, Woodstock, vice J. G. White, M.D.

TROTTER, A. K., L.R.C.P.Ed., L.F.P. & S. Glas., has been appointed Medical Officer for the Embleton District of the Alnwick Union, Northumberland, vice R. B. Graham, L.F.P. & S. Glas., resigned.

WEARNE, W., M.R.C.S.E., has been appointed Medical Officer for the Helston District and the Workhouse of the Helston Union, Cornwall, vice V. Wearne, M.R.C.S.E., resigned.

WEAVER, J., L.R.C.P.Ed., has been appointed Medical Officer of Health for Fenton, Staffordshire.

WELSH, W. D., L.A.H. Dub., has been appointed Apothecary to the County of Wicklow Infirmary, vice A. Nolan, L.R.C.S.I., M.R.C.S.E. (who acted as Surgeon and Apothecary), deceased.

WILSON, S. M. W., M.R.C.S.E., has been appointed a Surgeon to the West Norfolk and Lynn Hospital, vice T. M. Kendall, F.R.C.S.E., resigned, and appointed Consulting Surgeon.

Births, Marriages, and Deaths.

BIRTHS.

GOURLAY.—On the 15th inst., at Weston-super-Mare, the wife of Frederick Gourlay, M.D., of a son.

HISLOP.—On the 20th inst., at York-street, Glasgow, the wife of J. B. Hislop, F.R.C.S.Ed., of a daughter.

ILES.—On the 18th inst., at Watford, the wife of F. H. Wilson Iles, M.D., of a son.

LOVEJOY.—On the 17th inst., at Portman-street, Portman-square, the wife of W. H. Lovejoy, M.D., of a son.

LYMES.—On the 17th inst., at Priory-row, Coventry, the wife of Edward Lymes, M.D., of a daughter.

SARGENT.—On the 27th of Jan., at Lingasoogoor, Deccan, the wife of J. Forbes Sargent, Assistant-Surgeon Madras Army and 5th Infantry Hyderabad Contingent, of a son.

MARRIAGES.

GROSE—ROSSELL.—On the 16th inst., at St. Matthias', Richmond, Surrey, Samuel Grose, F.R.C.S., Surgeon H.M.'s Ship "Warrior," to Mary Cecilia (Pollie), third daughter of Henry Rossell, Esq., of Westbourne, Sheffield.

HANDCOCK—OLIVER.—On the 16th inst., at Rothwell Church, George Handcock, M.R.C.S.E., of Leeds, to Elizabeth, only daughter of Thos. Oliver, Esq., of Haigh House, Rothwell, near Leeds.

SYMONDS—FULLARD.—On the 8th inst., at Croyland Abbey, Wm. Nathaniel Symonds, Surgeon, of Croyland, youngest son of the late Charles Symonds, D.L., of Great Yarmouth, to Susan, widow of the late Edward Fullard, Esq., of Abbey House, Croyland.

DEATHS.

AUSTIN.—On the 24th of Feb., at Sherbrooke, Canada, W. Austin, M.D., Inspector-General of Hospitals, formerly of the 97th Regiment, aged 81.

GRANTHAM.—On the 15th inst., J. T. Grantham, M.R.C.S.E., of Crayford, aged 43.

LEARMONTH.—On the 16th inst., at Gloucester-gardens, Hyde-park, John Livingstone Learmonth, M.D., aged 89.

MACCLATCHIE.—On the 13th inst., at Bruges, A. MacClatchie, M.R.C.S.E., Surgeon, R.N., aged 53.

MARSHALL.—On the 11th inst., S. Marshall, M.R.C.S.E., of East Retford, aged 57.

MELDOLA.—On the 16th inst., R. Meldola, M.R.C.S.E., of Approach-road, Victoria-park, aged 30.

MORGAN.—On the 8th inst., at North-parade, Bath, of phthisis, William J. Morgan, M.R.C.S.E., of Edgeware-road, aged 27.

REED.—On the 11th of Feb., at Tuticoreen, South India, J. L. Reed, M.D.

ROLLS.—On the 9th inst., Thos. Rolls, M.R.C.S.E., of Blockley, formerly of Chipping Norton.

Medical Diary of the Week.

Monday, March 27.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
ST. MARK'S HOSPITAL.—Operations, 2 P.M.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL COLLEGE OF SURGEONS OF ENGLAND. — 4 P.M. Prof. W. H. Flower, "On the Comparative Anatomy of the Teeth of the Mammalia."
MEDICAL SOCIETY OF LONDON.—8 P.M. Dr. Andrew Clark will narrate some Cases of Perityphlitis, and also exhibit a Case of Peribronchial Fibrosis.—Dr. Simms, "On a Case of Epilepsy during the passage of a Pin through the Intestines."—Mr. J. D. Hill: Communication "On a Case of Excision of the Elbow-joint, showing the amount of Movement attainable after Operation."

Tuesday, March 28.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
GUY'S HOSPITAL.—Operations, 1½ P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M.
ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8½ P.M. Deputy Inspector-General Longmore, "On the Classification and Tabulation of Injuries and Surgical Operations in time of War."

Wednesday, March 29.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.
KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.
LONDON HOSPITAL.—Operations, 2 P.M.
CANCER HOSPITAL.—Operations, 3 P.M.
ROYAL COLLEGE OF SURGEONS OF ENGLAND. — 4 P.M. Prof. W. H. Flower, "On the Comparative Anatomy of the Teeth of the Mammalia."
ROYAL COLLEGE OF PHYSICIANS. — 5 P.M. Lumleian Lectures: Dr. West, "On some Disorders of the Nervous System in Childhood."
SOCIAL SCIENCE ASSOCIATION.—8 P.M. Mr. W. H. Michael, "On the Report of the Royal Commission on the Sanitary Laws."

Thursday, March 30.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 12; other Operations, 1 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Friday, March 31.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
ROYAL COLLEGE OF PHYSICIANS.—5 P.M. Lumleian Lectures: Dr. West, "On some Disorders of the Nervous System in Childhood."

Saturday, April 1.

ST. THOMAS'S HOSPITAL.—Operations, 9½ A.M.
HOSPITAL FOR WOMEN, Soho-square.—Operations, 9½ A.M.
ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M.
KING'S COLLEGE HOSPITAL.—Operations, 1½ P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL INSPECTIONS IN THE ARMY.

A CORRESPONDENT in the *Broad Arrow* is very anxious to see the system of the weekly medical inspection of soldiers abolished, even the restricted form of it at present in force in the army. He does not see why a soldier afflicted with itch, ophthalmia, &c., cannot be trusted to come to hospital of his own accord, and to his mind there appears something degrading to the men of a regiment in thus openly informing them that they are suspected of being likely to conceal infectious diseases, and is only less objectionable than the old loathsome practice of inspecting hundreds of healthy men in order that two or three might be caught with venereal diseases. Now, while we concur with the writer in condemning the latter practice, we confess that we can discover no indignity, but much utility, in the practice of parading men once a week in order to ascertain their condition of health, and to detect the presence of disease among them. There is a very wide difference, as it seems to us, between the two cases. Open and professed prostitutes, who trade in indecency, certainly occupy a position very different from that of respectable men, who may be credited with some feelings of pride and delicacy; and we should expect that the reintroduction of such inspections would deter such men from entering the army. The inspection of a man's chest and extremities is no more indelicate than the inspection of his face. The conditions of living are very different in the case of soldiers and civilians, the facilities that exist for the spread of contagious diseases being much greater among the former, and the diseases themselves of relatively greater importance. The correspondent referred to is compelled to allow that exceptional medical inspections during the prevalence of epidemic diseases are very proper; and it is unreasonable to assert that the authorities are not justified in seeking to avert the occurrence of an epidemic in a regiment by its periodical inspection, so as to detect the earliest manifestations of disease in the individual soldiers of which the regiment is composed. It is quite clear that ignorance as to the nature of a disease, or a disregard to symptoms which may seem trivial to the best soldier, may prevent him from seeking medical aid, the consequences of which might be anything but trivial to his comrades. Moreover, such inspections are not without their value in other respects. They tend to induce habits of personal cleanliness—an important matter at any time, but especially in the case of a large number of men living under the same roof, or occupying the same barrack-rooms. While the well-behaved, decent, cleanly soldier has nothing to lose by such inspections, he may gain a good deal by having such of his comrades as are careless in these respects kept up to the mark.

G. T.—All persons procuring qualifications prior to the commencement of the examinations provided for in THE LANCET Bill will be entitled to register in virtue of the said qualifications as at present.

THE communication of *Mr. Watkin Williams* arrived too late for insertion this week.

VACCINATION AND REVACCINATION.

To the Editor of THE LANCET.

SIR,—I am unwilling to encroach upon your space; indeed I should not venture to do so did I not believe the suggestions I am about to offer important, and as giving the result of upwards of fifty years' practical experience.

1stly. I recommend that vaccine lymph be taken from the arm of a healthy infant on the seventh day, instead of the eighth, the latter being the usual practice.

2ndly. It should, when taken, be as clear and transparent as the purest spring water; the least cloudiness will impair its protective efficacy.

3rdly. The lymph should be introduced by the slightest scratch with a keen, perfectly clean lancet, just below the cuticle, and never into the cellular tissue beneath the cutis vera.

4thly. In a primary vaccination, two vesicles on one arm, just below the deltoid muscle, are amply sufficient; and in secondary or subsequent revaccinations, one vesicle is as protective as a dozen. Lymph should never be taken from a revaccinated person.

By attention to the above rules the profession will see neither eruptions nor abscesses follow the operation, and find, too, its protective efficacy against the small-pox more infallible than by any other method.

Permit me to add that I have just now before me *lymph* and *pus combined*, given to me in tubes from one of our largest vaccine stations. Who can wonder that eruptions, abscesses, or other constitutional disorders should result from introducing such impure lymph into the human body?

Your obedient servant,
GEORGE BEAMAN, M.D.

Henrietta-street, Covent-garden, March 18th, 1871.

To the Editor of THE LANCET.

SIR,—It is a very peculiar fact that Jenner's discovery was vaccination and revaccination. His reasonings are beautiful illustrations of inductive logic, and centre in the discovery that the milk-maids of large dairies never have small-pox, because they are the subjects of frequently recurring attacks of a certain vesicle on the hands, the cause of which is a similar vesicle on the teats of the cow. The deduction would necessarily be, that if other people had similar vesicles occasionally recurring, they would likewise be exempt. So that Jenner's facts teach revaccination. I am not quite sure that he taught it. Perhaps he conceded a little to popular prejudice; for he was so clear in his reasonings that he must have seen their bearings. I do not know whether this mode of reasoning has been made sufficiently prominent.

I am, Sir, yours, &c.,
St. Ives, Hunts, March 22nd, 1871. J. DEANE, M.D.

HEALTH OF NEW YORK CITY IN 1870.

DR. CHARLES P. RUSSELL, Registrar of Records to the Health Department of the City of New York, has supplied the English Registrar-General with a summary of the mortality in that city during last year, from which it appears that 27,175 deaths occurred out of a population of 926,341 persons, the equivalent death-rate being therefore 29·3 per 1000. Cholera and diarrhœa caused 3956 deaths; scarlet fever, 975; different forms of fever, 518; diphtheria, 308; measles, 298; small-pox, 293; and whooping-cough, 201—the mortality from these eight forms of zymotic disease being equal to an annual ratio of 7·1 per 1000 persons living. The corresponding mortality rate from the same causes in London was 5·2 per 1000. In the large public institutions of New York 5002 deaths took place, or 18·4 per cent. of the total deaths recorded for the whole city; the proportion so returned in London was 15·8 per cent.

F.R.C.S.—We do not at all see the necessity for announcing in either military, medical, or lay journals the fact that an army assistant-surgeon has passed the necessary examination for promotion; and, what is more, the practice does not appear to us to be in good taste. It would not be particularly creditable to have failed in passing, and an announcement of success looks very much as if the officer meant it as a surprise to his friends.

A Country Surgeon.—The physician is entitled to a fee of two guineas.

THE USE OF ANÆSTHETICS.

To the Editor of THE LANCET.

SIR,—As your columns have been opened to the claims of the rival discoverers of ether as an anæsthetic, perhaps you will allow me to bring to your notice another claimant whose voice has not yet been heard.

Chloric ether (which is chloroform plus spirits of wine) was first administered to produce insensibility during a surgical operation at St. Bartholomew's Hospital by Mr. Holmes Coote, to a patient of Sir William (then Mr.) Lawrence, at my recommendation, in the spring of 1847. I was a pupil at the time, and had just commenced my medical studies at St. Bartholomew's. Trying the effects of sulphuric ether, which as your correspondent, "An American," justly says was introduced by Dr. Morton, of Boston, United States, I by accident came to try chloric ether, a preparation then little used. The effect in producing insensibility was found to be exactly the same as sulphuric ether, while it was free from the disagreeable taste which made sulphuric ether so suffocating to most people. At Mr. Jacob Bell's recommendation, I took some with me to St. Bartholomew's, and brought it to the notice of Mr. Holmes Coote, who was then Mr. Lawrence's assistant. On my assuring him I had tried it on myself, and that it was perfectly safe, it was administered by him to one of the hospital patients, who was about to be operated on that very day, and its success was so decided that Mr. Lawrence subsequently administered it with complete success to a lady who was unable to take sulphuric ether.

My object in placing these facts on record is in no way to detract from the fame of the great physician (Sir James Simpson) who has just left us. Far from it. To him, I believe, belongs the merit of having recommended, or at any rate introduced, to the profession the use of chloric ether minus its spirits of wine—i. e., chloroform. But it seems to me and to many of my friends worth placing on record, amongst the numerous claimants who have now sprung up, the fact that chloric ether, which is almost chloroform, was first used as an anæsthetic in our oldest London hospital by one of its most famous surgeons.

Your obedient servant,
M. C. FURNELL, F.R.C.S.,
Surgeon, H.M.'s Indian Army,
February, 1871. Professor of Physiology, Madras Medical College.

Mr. F. Knox, (Sheffield.)—We know nothing of the individuals named beyond what we learn from their advertisements, from the character of which our correspondent can form his own opinion. Why not consult a respectable medical man in his own neighbourhood?

R. P.—See Watts's Dictionary, vol. iii., p. 984. It contains information from which our correspondent may be able to *step out* a method for detecting methyl.

Mr. John Greene's letter shall be inserted next week.

F. A. C. S.—The Board of Trade, on the recommendation of the inspector of the district.

CAN THE DEAD CONVEY INFECTION?

To the Editor of THE LANCET.

SIR,—Many years ago, when attending some lectures and dissections at Clamart, Paris, a subject covered with small-pox pustules was brought in. A fellow-student (an Englishman) and myself made an examination of the body. He left Paris a few days afterwards. On my return to London I accidentally met him. His first question was, "Have you had small-pox?" I was pleased to reply "No." He then told me that soon after his arrival in England, and within the usual period of incubation, he was taken with a very sharp attack of variola, caught from the body in the Clamart dissecting-rooms.

I send this account as one of your correspondents in last week's LANCET offers a remark, that individuals receiving the supposed contagion from a corpse are at the same time exposed to an atmosphere poisoned by the patient during lifetime.

Your obedient servant,
Surbiton, March 13th, 1871. JOHN GAYLEARD.

To the Editor of THE LANCET.

SIR,—With reference to Dr. Wilks's inquiry, I beg to call your attention to an instance mentioned in the "Papers relating to the History and Practice of Vaccination."

Mr. E. Barber (Stamford), in reply to one of the queries in Mr. Simon's circular, says: "I have known only one instance of a fatal termination of small-pox after vaccination. It was the case of a medical student, who caught the disease from the dissection of a child brought into the dissecting-room of St. Thomas's Hospital, and who had died of small-pox. Four students took the disease from it, one of whom died."

This is a parallel case with that communicated by Mr. Brock in your number of the 4th inst.

Yours obediently,
Scarborough, March 15th, 1871. R. BARRINGTON COOKE.

PUBLIC VACCINATION AT HEXHAM.

THE 12th section of the Vaccination Act distinctly provides for exempting parents from fines for not having their children vaccinated before the expiration of three months, in districts where public vaccination is appointed to take place only twice a year. The Chairman of the Board of Guardians made a very proper use of his authority, and only acted in accordance with the spirit of the Act, in sanctioning the immediate vaccination by the public vaccinators of all unvaccinated children under the present urgent circumstances, and in suspending for the present the operation of a contract with the public vaccinators which is not fitted for epidemic times.

Mr. J. Ellerbeck, (Shuttleworth.)—We wish very much that correspondents would not forward us stamps in anticipation of private answers, because it is contrary to our practice to forward such. We know nothing of the pamphlet alluded to or of its author, and imagine our correspondent will find it a very difficult task to discover the proofs of which he is in search.

THE communication of *Messrs. Lalland and Paddison* has been forwarded to Dr. Hassall.

MEDICAL REFORM.

To the Editor of THE LANCET.

SIR,—The enclosed letter, as its predecessor, being, to all intents and purposes, refused insertion in the *British Medical Journal*, and as the present is the opportune moment, if ever, for the discussion of the grave practical issue now before the public, and I might say Parliament, may I request its publication in THE LANCET. If the Association Bill be the right thing in the right place and time, then it is highly expedient for a large majority of the members to endorse it in the most public way possible. But as yet I have seen no sign of approval of it either on a large or small scale, save in the leaders of your contemporary, where, of course, *necessity is laid upon it*. But if silence does not imply consent, the voice of protest and remonstrance, long, loud, and unanimous, should now be rising from the professional masses. If I have uttered but a feeble testimony against your adversary's lame and impotent Bill, it is, nevertheless, I hope, clear in its ring—earnest, honest, and true—"naught extenuating, and setting down naught in malice." Nothing would give me so much pleasure as to see my positions demolished, and to be proved in error. If defendable, why lacks to the present hour the defence of the obvious shortcomings of a measure that I trust, for its concoctors' sake, will be strangled in the birth, and quietly consigned to oblivion?

I am, Sir, your obedient servant,

Sheffield, March 20th, 1871. JOHN BALDERNIE, M.A., M.D.

[COPY.]

To the Editor of the British Medical Journal.

SIR,—At the end of this letter I will reply to your strictures on my letter in THE LANCET of Feb. 25th. But the most important business first.

Discussion of the two rival measures of Medical Reform—THE LANCET's and the *Association's* Bill—is a prime public duty of the profession at the present conjuncture. Honestly to disparage that which in a writer's opinion deserves disparagement—to show up, while it is yet time to remedy, glaring defects in a proposed piece of legislation, defects that must full surely nullify it for its ends, and in the end nullify or stultify its projectors—should involve no imputation of a factious spirit, no suspicion of personal unfriendliness or professional disloyalty—should not even be construed as *seeming* to sow discord or create disunion, where cohesion and harmony are the things called for. "Better is open rebuke than secret love. Faithful are the wounds of a friend; but the kisses of an enemy are deceitful."

A new member of the *Association*, it appeared to me, could best evince his zeal for its credit by seeking through its organ, during the short time of deliberation that now remains, to prevent a blot upon its fair escutcheon by the scathing condemnation that will one day be written by the historian of its suicidal political action in this year of grace 1871.

After refreshing my memory with your "historical summary," I am only the more confirmed in my utter hopelessness of any valid reform from the *Association* Bill. The plain reasons why it must *necessarily* and *inevitably*, if passed, be a complete failure are apparent on the very face of it to any reflecting mind on the outside of the charmed circle of the "authorities."

The most powerful of coalitions—the force of the Government and the force of the corporations—are united to resist the just claims of the profession and the essential exigencies of reform. The former hold office, under present circumstances, by too ticklish a tenure to permit them to offend and alienate a large constituency like the medical "powers that be." This is the real film upon their eyes that blinds them to their own "Liberal" principles—that prevents them seeing the fairness, justice, or necessity of ceding direct representation to the profession. Last year they could not afford to budge one inch on this tender ground, and preferred to wreck their scheme. They are as much opposed at the present hour, and from the same motives, to any real concession. Hence the folly—*some call it by a harsher name*—of the Reform Committee to attempt to conciliate them. For to this end, with this view, they have emasculated their Bill, belied their professions, been untrue to their function, and disappointed the just expectations of their constituents. This is a damning charge; but it is too true. Their Bill fails in the prime and essential point. *It leaves a preponderance in the Council of the interest that has hitherto resisted, and will yet resist, all reform!* Against this they are pledged by every training and every tie, every prejudice and every passion of their lives—

> ——— "ad mores natura recurrit
> Damnatos, fixa et mutari nescia."
>
> *Juvenal, Sat.* 13.

The eight representatives conceded to the profession seemed at the first blush of the thing a mighty boon to have obtained; but in effect it is a sham, a make-believe—"a mockery, a delusion, and a snare,"—asking bread, and getting a stone! Of what avail are these eight members, even supposing them *always* backed by the Crown nominees—a most improbable supposition—in questions where corporation interests are to be maintained inviolate? Seventeen to fourteen, according to the *Association* Bill, is just the working majority that will enable the old obstructive Council to carry all things their own way. And this is the issue for the profession of all the labours of the *Reform* Committee! It was enough to perpetuate the old unwieldy and expensive two dozen members of Council—an excess of talkers and a waste of money, not to say a negation of legislation—denounced for years by the whole profession; but to add eight to their number to be virtual *dummies* to be bowled over, like nine-pins, in every contention for progressive measures, was only adding injury to insult.

It is an ungrateful task, Sir, to speak out harsh truths; but there is a woe denounced on those who, to avoid offending susceptible minds, "preach smooth things" and "prophesy deceit." No man feels more than myself how ungracious it is to condemn the unfaithful action of men, in a body, whom we cordially respect for their honesty and worth, or talent and eminence, in their private capacity. Office, however, alters manners.

Sir, I hate with a perfect hatred all shams and make-believes. This alleged Reform Bill of the *Association* is a mere "sop to Cerberus," a blind, a feint, a piece of political sleight of hand or legerdemain; but it is worse, a baited hook, that, once swallowed, will stick in the throat of the profession, and hold them helplessly by the jaw! If twelve years of legislation by the old Council have left *in statû quo ante* the most vital questions—as those of an amended and extended preliminary education; a high yet minimum standard of examination; crucial tests at the bedside of the candidate's real powers of diagnosis and fitness for practice; "the one-portal system;" and summary checks to interlopers;—if these urgent matters which a Council of direct representatives of the profession would settle in a few weeks, have been long steadily blinked and systematically ignored, what hope is there, Sir, that the same feeble, trembling, reluctant hands being still entrusted with their management will speed them any more the next dozen years?

"Save us from our friends!" the unrepresented mass of physic may well exclaim. It had dreamed in its blind confidence that it was on the point of seeing knocked off for ever fetters that had long galled; but now awakes from its fond delusion to find its would-be deliverers only rivetting them on more surely and lastingly.

What remains, then, Sir, but that the profession must take the carrying out of a valid measure of reform into its own hands. And herein THE LANCET Bill will answer admirably their ends. Compromise is out of the question. We must be either bond or free. There is no middle course—no *tertium quid*. The battle of progress, of right and justice, if fought at all, must be fought out to the bitter end. As "brave" men, we can manage to "live on" without sham reforms, as our fathers did; rather than as "cowards sneak to death" with such pretended political largesses in lieu of our British birthright—the right of taxation to representation.

THE LANCET Medical Amendment Bill, as far as it has yet been subjected to criticism, has been pronounced by many who dare speak their minds as a most statesmanlike measure—the nearest to the demands and necessities of the profession ever yet propounded. It has reduced the Council to the desired minimum of efficiency both of an executive and deliberative assembly; and with perfect fairness it has equally divided the members—one-third to the Crown, one-third to the corporations, and one-third to the profession. Its provisions will secure all that medical men, the most advanced of their generation, have sighed and laboured after for long years. Only wilful blindness or obstinate prejudice can resist conceding its merits. "It will be difficult to carry." Doubtless. So are all great measures. But what is immediately wanted is an *organization*, and ultimately *perseverance*, till it is carried. Perhaps subscription for expenses may be necessary; for no warfare can be waged without the "sinews of war." If every practitioner in every town will only "put his shoulder to the wheel," and urge his parliamentary representative energetically to take up the question, and if meetings are held and petitions poured in *pari passu*, this grand Medical Relief Bill will become law sooner or later, like many other boons to the masses, in spite of Government apathy or back stairs corporation influence.

I am, Sir, your obedient servant,

Sheffield, March 11th, 1871. JOHN BALDERNIE, M.A., M.D.

P.S.—As to your statements regarding my letter in THE LANCET.

1st. As to the refusal of admission to the *Journal*. This was my impression, although not conveyed *totidem verbis*. Editors have a pleasanter way of shelving unsuitable communications. In your first most courteous private letter to me, you offered to insert; but from the altered tone of your second note to me, and knowing your foregone conclusion on the question, I considered my letter, postponed *sine die*, as virtually, if not actually refused. If I was wrong herein, pray forgive me; for under that belief I asked you to destroy the letter, saying I had a copy, and would forward it to THE LANCET. Most likely, then, my note to the Editor gave him fully to believe that mine was a "rejected address."

2nd. As to my date of membership of the Association. When I wrote to THE LANCET, I had become a member, and wish to be mentioned as such. When I wrote to you first, I was merely going through the form for membership. THE LANCET could have no possible knowledge how long I had been a member.

3rd. If the silence of the profession is to be construed as condemnatory of THE LANCET Bill, it is much more so of the *Association* Bill. Many who, like myself, have no personal or party ends to subserve, have testified in favour of THE LANCET Bill, or its essential principles. But I have yet seen no letters of neutral persons upholding the *Association* draft. The silence of the profession, if it has any meaning, means the *apathy of despair*—that the Association, with power to carry an effective measure, yet tries to palm off a sham on the profession.

J. B.

DEGREES IN ABSENTIA.

"DEGREES.—M.A., Ph.D., &c., in absentiâ or presentiâ.—Qualified gentlemen desirous of proceeding to degrees in Arts, Law, Theology, or Medicine, receive official instruction and advice by writing to Dr. S., 145, Packington-street, London (see Directory)."

We believe the time is coming when men will have to specify very minutely the way in which they come by their titles. The above advertisement is sent to us from India, cut out of the *Home News*. A few weeks ago it was sent to us from Glasgow, and it is constantly turning up. Surely it is not necessary to denounce as utterly worthless the degrees that can be got in this way, nor to say that the recognition of them by the public is entirely a matter of option.

PROVINCIAL NEWSPAPER ENTERPRISE.

WE regret that we cannot insert the paragraph forwarded by a correspondent, although we fully recognise it as a mark of enterprise on the part of a provincial journal like the *Birmingham Daily Gazette* that it is enabled to furnish five columns daily of reports of the parliamentary debates of the previous night, like a London paper, notwithstanding it is published over one hundred miles from the metropolis.

Dr. C., (Edinburgh.)—We decline to insert communications in THE LANCET that have appeared elsewhere.

MATTERS SANITARY IN WHITEHAVEN.

WE are indebted to some unknown friend for a copy of the *Whitehaven News* of the 16th instant, containing a long report of a recent meeting of the Whitehaven Town and Harbour Trust. The extraordinary loquacity exhibited by some of the members of this body is such as entirely to preclude us from attempting to decide whether, in the language of one of the late John Leech's *Punch* rustics, "um's taken um," or "um's taken um." It must suffice that we gather from the report of the medical officer of health, Mr. Lumb, that the town is in a much more healthy condition now than it was some months ago, when it several times figured in our columns very unsatisfactorily.

Mr. J. H. Walters.—Prof. Huxley's paper on "Protoplasm" first appeared in the *Fortnightly Review*; and, if we remember aright, it is republished in his recent volume of "Lay Sermons."

Remorse.—Consult a respectable practitioner in the town. We do not prescribe.

McCurtee v. *Pattie.*—As the particulars of this case did not transpire in court, we cannot pass any criticism on the parties concerned, or upon others who may be supposed to have been concerned.

Prof. Rutherford's fifth lecture will appear next week.

A GRIEVANCE.

To the Editor of THE LANCET.

SIR,—Allow me to call your attention to a grievance. According to the Irish Medical Charities Act, the dispensary medical officer of the district is obliged to attend the Magistrate's Court in order to examine and, if necessary, certify in cases of dangerous lunatics "without fee or reward," as the Act puts it. Need I say this is a great hardship, involving much trouble, loss of time, and responsibility. My case is peculiarly trying, inasmuch as all the police business is transacted in the New Courts (situate in my district). I am obliged to attend in every instance of alleged lunacy, averaging 200 every year. This was formerly the duty of the police surgeon, who receives a good salary. In the country it frequently happens the unfortunate doctor is obliged to travel six or seven miles to see the person charged, and then, owing to a second magistrate not being present, he is obliged to return back, and go over the same work again (it being actually required that two justices and the doctor should sign the committal)—in cities one magistrate is enough; and all this to the detriment of his own legitimate business. It was Lord Mayo who framed this unjust Act. It would be only right that a fixed fee should be allowed in all such cases. Sir D. Corrigan, Dr. Brady, and other friends might kindly seek to remedy this injustice.

I hope I am not asking too much in requesting you to lend a helping hand to the medical profession in Ireland, in drawing attention in your most influential journal to the above facts.

I remain, SIR, yours faithfully,

Dublin, March, 1871. ALBERT O. SPEEDY.

Medical Etiquette.—When, from any cause, a union medical officer is ordered to visit and attend a patient who is under the care of another practitioner, common courtesy demands that he should take no steps whatever without the knowledge and concurrence of the latter. As a general rule, the guardians do not desire that the parish doctor should supersede in any way the ordinary attendant; but, in order to fulfil the regulations for relief, they require his opinion as to the propriety of any extra relief which has been recommended. In that case the parish surgeon should, if possible, communicate with the ordinary attendant before paying his visit; and if that be impossible, then he is bound to confine himself strictly to the duty imposed upon him. It is manifestly most improper for a medical man to take the opportunity of being ordered by the relieving officer to visit the patient of another practitioner, to express a damaging opinion of him behind his back, by questioning his diagnosis, impugning his treatment, or stating that if he had had the treatment of the case the result would have been more favourable. Such a practice is as unwise as it is uncharitable; for no one has a right to criticise actions which never came under his own observation.

Veritas.—We think our correspondent must be mistaken. Is the gentleman named surgeon to the Queen's Hospital?

Mid Kent.—We fail to understand what was the exact subject of complaint.

PUBLIC HEALTH.

To the Editor of THE LANCET.

SIR,—I am anxious to gather up all the materials I can which will help on the preparation of a series of tracts and handbills relating to the promotion of public health in the very widest sense of the word. Such publications should, I think, be circulated by Local Boards of Health with a liberal hand, especially just now.

I should feel greatly indebted to any of your readers (especially such as may happen to be medical officers of health) who would forward to me copies of handbills, &c., which are in circulation in their localities, and are likely to be useful elsewhere in the uphill work of persuading people to take precautions against infectious diseases, and to be careful about drinking polluted water, or inhaling impure air. Suggestions about the adulteration of food and regulations about baths and washhouses are also within my scope.

Your obedient servant,

G. F. CHAMBERS,
Chairman of the Bromley Local Board.

Bromley, Kent, March 17th, 1871.

AMARANTH WALL-PAPER.

IN the short account of this paper which appeared in our issue of last week, the address of the Secretary, B. C. Hook, Esq., 9, Union-court, Old Broad-street, was omitted. We must refer our numerous correspondents to that gentleman for all information.

M.R.C.S.—Yes. At the College of Surgeons, Lincoln's-inn-fields.

MEDICAL FEES AT CORONERS' INQUESTS.

Mr. W. J. Clarke (?)—Undoubtedly the law provides that fees are not to be given for evidence at inquests on persons who have died in infirmaries and other such public institutions. The language of Clause 5 of the Act of 1836 is, that nothing in the Act "shall be construed to entitle the medical officer whose duty it may have been to attend the deceased person as a medical officer of such institution as aforesaid to the fees or remuneration herein provided." We, nevertheless, think our correspondent's case a hard one.

Enquirer.—To perform craniotomy alone is not illegal; but it is certainly imprudent if help and consultation are at all within reach.

A COURSE TO BE COMMENDED.

THE *New York Medical Gazette* of February 25th last contains a review of Dr. Maudsley's Gulstonian Lectures for 1870, which it appears have been republished in America by Messrs. Macmillan, the original publishers in this country, and by an American firm. We make no apology to our readers for placing before them the following extract, with which the review concludes:—

"One word as to the editions before us. The first is the author's edition, placed in this market by the English publishers, who have an established branch in this city; the second is a reprint, far inferior in mechanical execution, made for the profit of the American publishers, at the author's expense. Too much of this sort of business is daily done in our country, and its profitable continuance casts discredit not only on the vendors, but on the purchasers of purloined wares. A pirated reprint of THE LANCET robs the editor of that journal of a large portion of his legitimate reward. The *Practitioner* has been similarly curtailed in its circulation by what the *Journal of Psychological Medicine* properly condemns as a 'shabby American reprint.' Dr. Anstie's excellent papers on the 'Use of Wines in Health and Disease' have been reproduced in the same conscienceless way, and similar examples might be multiplied by hundreds. In many cases such action has been excused, though not justified, by the circumstance that the original editions were not brought fully within the reach of American purchasers; but in those we have mentioned this palliation cannot be advanced. As regards the present work, we sincerely trust that a sense of common honesty will induce our readers to purchase the English edition,—thereby making some slight return to the author for the pleasure and profit which he *affords* them,—rather than the 'shabby American reprint,' the gain from which is presumably his loss. In the absence of an international copyright, the only remedy for a great injustice lies in the honourable instincts of individual members of the community; and in our profession, at least, it is time that this remedy were applied."

MURDER AND ITS PUNISHMENT.

A PARLIAMENTARY RETURN, just published, shows that during the ten years 1861 to 1870 inclusive, 236 persons have been condemned to death for the crime of murder other than infanticide. Of these, 110 suffered the extreme penalty of the law, 2 escaped the hangman by committing suicide, and the rest had their sentences commuted in most cases to penal servitude for life. This return, which is in many respects interesting, is prepared in the usual slip-shod style of such documents. No abstract or total is given, and no indication is given of the office or person responsible for its facts, or of the date of its preparation.

Mr. H. M. Duncan.—Yes.

A. B.—We cannot advise. Consult a respectable solicitor.

ON NEURITIS OF THE BRACHIAL PLEXUS.

To the Editor of THE LANCET.

SIR,—In your report in last week's LANCET of the discussion at the Royal Medical and Chirurgical Society of my paper with the above heading, a printer's error has crept in which completely perverts the sense of my reply to one of the questioners, and which I beg you will kindly allow me to rectify. I am there made to say that "Dr. Powell's view was untenable, because muscles paralysed by *disease* never lost their irritability to the induced current." For *disease*, read *disuse*. The case related in my paper was one of that very class in which muscles paralysed by disease do lose their excitability to the induced current.—Your obedient servant,

JULIUS ALTHAUS, M.D.

Bryanston-street, Portman-square, March 17th, 1871.

An Anxious Assistant.—The great duty of the accoucheur in regard to the danger of post-partum hæmorrhage is to take steps to secure a good contraction of the uterus. This is to be done by keeping the left hand firmly on the fundus of the uterus, and following it down as the child descends and the uterus contracts. Such pressure should be kept up either by the doctor's hand or the nurse's until the placenta is away and the binder applied. In the case of women subject to post-partum hæmorrhage, a good dose of ergot should be administered as soon as the os uteri is fully dilated.

USE OF THE WINGED CATHETER AFTER PARTURITION.

To the Editor of THE LANCET.

SIR,—I have lately had under my care two of those troublesome cases in which the use of the catheter is necessary after parturition. I adopted the plan of introducing one of Mr. B. Holt's winged catheters (a large size, at least a No. 10, must be used, or it will slip out), put a plug in the end, and instructed the nurse to draw off the urine every four or six hours. There was no trouble in introduction other than in the case of an ordinary catheter. The cases did perfectly well, and no complaint of inconvenience was made. In one case the catheter was used for three days; the other, eight days.

To country practitioners who have long distances to travel to their patients, I should think this plan would be useful, as it would save a second or third journey in one day; and it is more especially in the interest of those gentlemen that I venture to forward this communication.

I am, Sir, yours obediently,

Battersea, March 13th, 1871. W. H. KRAFTER.

PRIVILEGES OF REGISTERED PRACTITIONERS.

Mr. A. F. Hamilton.—It is the legal privilege of registered practitioners in any part of her Majesty's dominions to demand and recover for medical or surgical services according to the nature of the qualification or qualifications in virtue of which they are registered. Clause 31 of the Act of 1858 provides that they shall be able to recover in any court of law, "with full costs of suit, reasonable charges for professional aid, advice, and visits, and the costs of any medicines or other medical or surgical appliances rendered or supplied by him to his patients," &c. &c.

Enquirer.—Mr. Brady's Bill is not yet printed.

Mr. J. Joviani.—The gentlemen named are fully entitled to our correspondent's confidence.

Dr. Woodward, (Worcester.)—We are sorry that we cannot comply with our correspondent's request, owing to a rule that obtains with us not to insert communications that have appeared elsewhere.

Mr. Henry Smith's paper is in type.

PARASITICAL DISEASE AND SEWAGE IRRIGATION.

To the Editor of THE LANCET.

SIR,—Although several weeks have elapsed since the last of Dr. Cobbold's papers on these subjects was read at the Association of Medical Officers of Health, I ask your permission to say a few words on them, as I have hitherto been too fully occupied in other matters to do so.

I am sure all medical men will at once admit the extreme importance of the two subjects when considered in the connexion with each other suggested by Dr. Cobbold, and I should be one of the last persons to wish to shirk the fullest possible investigation of the possibilities to which he has called attention; but, having said so much, I desire to point out that they are only possibilities and suggestions, and that as yet Dr. Cobbold is not in possession of any facts in support of his—no doubt very plausible—theories. When I went to hear his first paper, "*illustrated by drawings and specimens*," I went expecting to find that, with his indefatigable industry and delicate minuteness of observation, he had at length proved his case; but what was my astonishment to find that his "specimens" had nothing in the wide world to do with "sewage irrigation," and that his "drawings," equally innocent of all connexion with the title of his paper, I had already seen (or most of them) with mingled horror and admiration in the pages of his "Entozoa." It is more than ten years since I first began to labour at the utilisation of sewage by means of irrigation; I have devoted a large portion of those ten years and large sums of money to the cause, and I went to hear Dr. Cobbold's first paper in the belief that I should be convicted, by a series of hard facts, of having done my best to spread death broadcast over the land, and that it was mathematically demonstrable that I must already have been guilty of a not inconsiderable number of murders, besides having inflicted an ever-increasing amount of misery on the human and bovine races, and that I must by this time have an almost incalculable number of pigs' livers on my conscience. My relief was proportionately great when I found that, although no less than six years have elapsed since Dr. Cobbold first held me up in *The Times* to public execration as one of the chief enemies of mankind, he has as yet not been able to collect any positive proof against me.

That the ova of parasites are to be found in town sewage, and must sometimes be carried by it over the fields to which it is applied, no one can deny; but it is a rash assumption to say that therefore parasitical diseases must be increased by that means. Before the ova can arrive on a field in this manner, they must go through a marvellous amount of friction, rolling, and jolting. What proof is there that, after descending through the pipes of houses, and passing through, in most cases, several miles of sewers, performing one complete revolution in, say, every inch—that is, in every 100 diameters,—they would arrive on the land in a state of fertility? But, supposing this to be proved, how long would it be before they could be taken into the stomach of a cow? All Dr. Cobbold's arguments were based on the assumption that nothing but grass can be grown on a sewage farm. Let us, therefore, take the case of grass. A crop is obtained in, say, four weeks. One dressing of sewage is given immediately after the previous crop, or at the beginning of the twenty-eight days, and three other irrigations would be given at intervals of, say, five days. This would bring us down to the fifteenth day, leaving thirteen days for the crop to mature, and the soil to dry, before mowing, carting, &c., after which, as a rule, another twelve to twenty-four hours would elapse before the grass would be actually eaten. Therefore we are safe in saying that more than ten days would always elapse between the last irrigation and the consumption of the produce. Then, assuming that the ova survived all the perils of their journey from town to country, and farther escaped all the various obstacles which might retard their progress through the irrigating channels—against which "double event," however, the odds would be considerable,—to what beneficial or inimical influences would they be subjected during those ten days? To alternations of sunshine, rain, cold wind, warm wind, and, above all, the consequent fluctuations in their condition of *moisture*.

Now, Dr. Cobbold laid great stress on the rapidity with which the ova of some parasites develop into their larval condition under the influence of moisture, accompanied—I presume, although he did not say so—with a certain minimum temperature. But if the temperature is lowered and the moisture abstracted during these processes, what then?

It will be observed that I have here taken only the most favourable case for Dr. Cobbold; for if he could establish the soundness of his theory under the most favourable conditions, it would go far to condemn sewage irrigation. But it is only fair to ask how he proposes to preserve fertility in the ova which I spread over my Romford farm last January?

Let us go still a little deeper. The sewage flows, or, perhaps I should say, oozes gently, over the edges of my carriers, and for a few, very few, minutes trickles through the roots and lowest quarter or half inch of the stems of the rye-grass, and, driving out from the soil the air which bubbles up through it, sinks down to fill the pores from which the air has been displaced, and carries with it into the surface pores all minute particles in suspension. The upper stratum of soil is, therefore, the natural place to look for the ova, and *not the grass*. The scythe, moreover, as a rule, does not descend as low as the height to which the sewage rises on the stems. I except, of course, all improperly managed sewage farms, such as Croydon, because the best agricultural result can only be obtained in conjunction with the best sanitary result, or, in other words, with economy of sewage and cleanliness. And if by exception an ovum did come in contact with a stem of grass above the scythe-line, by what law in physics would it be held suspended on the side of the smooth polished stem? And when the latter was cut, why should the vibration not shake off the ovum? If the ovum which has gone through so many adventures scatheless is to be safely conveyed to the haven of the cow's stomach, it has still to hold on to the grass during the alarming processes of raking, pitchforking, carting, uncarting, and distributing. Poor ovum! Can anyone calculate the chances against each individual ovum that leaves its bearer during the 365 days in the year ever attaining, through the medium of grass, to the proud position of a cysticercus?

Whatever the chances are, they must at once be multiplied by 8 or 10; for, as a sewage farmer, I venture to say that when sewage farming is properly understood, not more than 10 or 12 per cent. of the acreage of each sewage farm will be under grass, and no one will pretend that ova can climb up the stem of a cabbage or a lettuce; while as to other produce, potatoes they equally could not reach; while to carrots, turnips, or mangold wurtzel they would not have access for some weeks before harvesting, and they would be more obstinate than I take them to be if they resist "pulling," scraping, washing, "pulping," &c.

So much, Sir, for the views of a practical farmer. But there are other points that I would suggest for the consideration of physicians, naturalists, and helminthologists. Is it really a fact that every human being infested by hydatids of the echinococcus has swallowed the excrement of a dog? How was the first tænia echinococcus developed? How the first tænia solium, and so on? Does helminthic life always go round and round in this vicious circle? Is not this theory a deduction, and not an induction? Do helminthologists really quite understand as yet the whole of their strange science? If the liquid portion of sewage be not utilised on the land, would it be less dangerous to turn it into the rivers to feed fish? Yet this is what Dr. Letheby and Mr. Hawksley, if I understand them rightly, propose to do with their, as yet undiscovered, or at least unnamed, "chemico-mechanical process."

I am, Sir, your obedient servant,

Parsloes, Barking, March 12th, 1871. W. HOPE.

COMMUNICATIONS, LETTERS, &c., have been received from—Prof. Rutherford; Prof. Parkes; Dr. Ramskill; Dr. Rogers; Mr. Tucker; Mr. Symonds, Croyland; Mr. Floyd; Dr. Davies, Aberaychan; Dr. Da Silva; Mr. Lynch; Messrs. Latham & Co., Melton Mowbray; Dr. Phillips; Mr. J. H. Walters, Faringdon; Dr. Evans; Dr. Young; Mr. Brook; Mr. Best, Stanningley; Mr. Dickinson; Mr. White; Dr. Deane, St. Ives; Mr. Hunt; Dr. Royds, Reading; Dr. Morgan; Mr. Gream; Mr. Tempson, Truro; Mr. G. Arden, Cork; Mr. Croft, Bicester; Mr. Moore, Chester; Mr. Dent, Uppingham; Mr. Shepheard; Mr. Jessett; Mr. Boyd; Mr. Williams; Hr. J. Hendley, Portsmouth; Mr. Nathan; Dr. Roberts; Mr. Dearden; Dr. Swaby Smith; Mr. Richards; Mr. Roberts; Dr. Craig; Mr. H. M. Duncan; Mr. Krynes; Dr. Gascoigne, Montreal; Mr. Purvis; Mr. Sullivan, Bengal; Dr. Walker, Carrickmore; Mr. Sawyer; Mr. Pike; Mr. Chambers, Bromley; Dr. Brown, Morland; Dr. Falconer, Bath; Dr. Griffiths, Oldcastle; Mr. O'Farrell, Ghyree; Mr. Fowler, Southampton; Mr. Sewell; Mr. J. Cheese, Newport; Messrs. Letts and Co.; Mr. R. James, Crowland; Mr. Lee; Mr. J. Guest, Sibford; Mr. S. Craddock, Shepton Mallet; Dr. De Renzy, Kingstown; Mr. Wick, Cherry Hinton; Rev. C. Handcock, Milsrow; Mr. Gayleard; Dr. Althaus; Mr. Barrow; Mr. Gross, Oxford; Dr. Beaman; Dr. Corbet, Beverley; Mr. Couch, Bodmin; Mr. Rayner; Mr. Mackenzie; Mr. Robins; Mr. Henston, Edinburgh; Mr. Hamilton; Dr. Wright; Mr. B. Davys; Mr. Jeaffreson, Newcastle-on-Tyne; Mr. Brownfield; Dr. Dale, Plymouth; Dr. Holland; Mr. T. Harrison; Mr. MacCormac, Belfast; Dr. Woodward, Worcester; Mr. R. Willis; Mr. Dobson, Bristol; Mr. Clemman, Stroud; Dr. Thomson; Dr. Purdon, Stafford; Mr. Ellerbeck; Dr. Lyne, Coventry; Mr. Gayton, Homerton; Dr. Laurie; Mr. Paton, Romsey; Mr. H. Smith; Mr. Hill; Dr. Morris; Mr. T. Watkin Williams, Birmingham; Mr. Peller; Mr. Woodd; Mr. Winfield; Mr. Graham; Mr. Williamson; Mr. Broome, Dudley; Mr. Roberson, Market Rasen; Mr. W. Cumming, Whitehaven; Mr. Ellison; Mr. Leach, Allerton; Mr. Roe, Ellesmere; Mr. C. Wood, Liverpool; Mr. Holland; Mr. Joviani; Mr. Price; Theta; Observer; The Secretary of the South London Hospital; G. T.; Enquirer; H. J. R.; F.R.C.S.; Delta; Fist Justitia; Sivrup; M.D.; &c. &c.

Liverpool Daily Courier, Edinburgh Evening Courant, Brighton Examiner, Wine Trade Review, Newcastle Daily Journal, Hexham Courant, North British Daily Mail, Walsall News, Whitehaven News, Birmingham Daily Post, Croydon Advertiser, and *Brighton Guardian* have been received.

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